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California State Trauma Registry DATA DICTIONARY 1.0 ~~2007~~2009

in compliance with National Trauma Data Standard Data Dictionary Version 1.2.5

A component of the California EMS Information System (CEMSIS)

EMSA #

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EMERGENCY MEDICAL SERVICES
CEMSIS DATA SYSTEM STANDARDS
California State Trauma Registry

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Introduction

Traumatic injury, both accidental and intentional, is the leading cause of death in the first four decades of life, according to the National Center for Health Statistics.[1] Trauma typically involves young adults and results in the loss of more productive work years than both cancer and heart disease combined.[2] Each year, more than 140,000 Americans die and approximately 80,000 are permanently disabled as a result of injury.[3] The loss of productivity and health care costs account for 100 billion dollars annually.[4]

Research provides evidence of the effectiveness of trauma and EMS systems in reducing mortality, morbidity, and lost productivity from traumatic injuries. Almost three decades of research consistently suggests that in-hospital (and post-discharge) mortality rates are reduced by 20 to 25% among severely injured patients treated in trauma centers organized into a regional or statewide trauma system.[5-9] Nevertheless, much of the work investigating the effectiveness of trauma system (center) development has been hampered by the lack of consistent, quality data to demonstrate differences in mortality over time or between hospitals, regions, or states.

Hospital-based trauma registries are the basis for much of the research and quality assessment work that has informed clinicians and policy makers about methods to optimize the care of injured patients. Yet, the actual data points contained in independent hospital registries are often so different in content and structure that comparison across registries is nearly impossible.[10] Database construction for trauma registries is often completed in isolation with no nationally recognized standard data dictionary to ensure consistency across registries. Efforts to standardize hospital registry content have been accomplished by central site registries located at the local EMS agency (LEMSA). However, inconsistencies in data collection still remain between LEMSAs with no central site data collections efforts at the state level.

Recently, federal agencies have made investments to fortify the establishment of a national trauma registry.[15,16] Much of this funding has focused on the National Trauma Data Bank™(NTDB), which represents a concerted and sustained effort by the American College of Surgeons Committee on Trauma (ACSCOT) to provide an extensive collection of trauma registry patients provided primarily by accredited/designated trauma centers across the U.S.[17] Members of ACSCOT and staff associated with the NTDB have long recognized that the NTDB inherits the individual deficiencies of each contributing registry.[18]

During 2004 through 2006, the ACSCOT Subcommittee on Trauma Registry Programs was supported by the U.S. Health Resources and Services Administration (HRSA) to devise a uniform set of trauma registry variables and associated variable definitions. The ACSCOT Subcommittee also characterized a core set of trauma registry inclusion criteria that would maximize participation by all state, regional and local trauma registries.

In California, efforts to obtain trauma patient data began with the trauma regulations which were promulgated in the early 1980's and revised in 1999. Section 100257 states that local EMS agency shall develop and implement a standardized data collection instrument and implement a data management system for trauma care. The system shall include the collection of both prehospital and hospital patient care data and be integrated into the local EMS agency and State EMS Authority data management system. In addition, all hospitals that receive trauma patients (regardless of designation) shall participate in the local EMS agency data collection effort.

Section 1797.199 of the Health and Safety Code required a "standardized reporting of trauma patients to local trauma registries" by July 1, 2003. The Commission on EMS approved the following minimum trauma patient criteria for reporting trauma patients to local trauma registries:
ICD-9 800-959.9
AND Physically evaluated by trauma or burn surgeon in the ED or resuscitation area
OR Death in Emergency Department
OR Transfer for trauma services (note: may include inter-facility and intra-facility)
Exclusion: Isolated burn without penetrating or blunt mechanism of injury

During 2005 through 2007, the California Trauma Advisory Committee and its Trauma Data Ad Hoc Group reviewed the NTDB recommended data dictionary and analyzed each data element as it pertained to California's trauma care delivery system. This data dictionary represents the culmination of this work in addition to some minor additions/modifications made to address California's unique trauma system. Institutionalizing the basic standards provided in this document will greatly increase the likelihood that a statewide and national trauma registry would provide clinical information beneficial in characterizing traumatic injury and enhancing our ability to improve trauma care not only in California but in the United States.

To realize this objective, it is important that this subset of uniform registry variables be incorporated into all trauma registries, regardless of trauma center designation (or lack thereof).

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California Trauma Registry Dataset Patient Inclusion Criteria

Definition:

To ensure consistent data collection across California and into the National Trauma Registry, a trauma patient is defined as a patient sustaining a traumatic injury and meeting the following criteria:

At least one of the following injury diagnostic codes defined in the *International Classification of Diseases, Ninth Revision, Clinical Modification* ***(ICD-9-CM): 800–959.9***

AND

Physically evaluated by trauma or burn surgeon in the ED or resuscitation area

OR

Death in Emergency Department

OR

Transfer for trauma services (note: may include inter-facility and intra-facility)

Exclusion:

Isolated burn without penetrating or blunt mechanism of injury

COMMON NULL VALUES

Data Format [combo] single-choice ***California/National Minimum Element***

Definition

These values are to be used with each of the California Trauma Registry Data Elements described in this document which have been defined to accept the Null Values. ~~Please include these variables in the implementation of the California Trauma Registry Version 1.0. Null Values~~. Please include these variables in the implementation of the California Trauma Registry Version 1.0 dataset.

Field Values

~~-25 Not Applicable~~	~~-5 Not Recorded~~
~~-10 Not Known~~	
1 Not Applicable	2 Not Known/Not Recorded

Additional Information

- For any collection of data to be of value and reliably represent what was intended, a strong commitment must be made to ensure the correct documentation of incomplete data. When data elements associated with the National Trauma Registry are to be electronically stored in a database or moved from one database to another using XML, the indicated null values should be applied.
- ~~Not Applicable: (Code 1) = This null value code applies if, at the time of patient care documentation, the information requested was "Not Applicable" to the patient, the hospitalization or the patient care event. For example, variables documenting EMS care would be "Not Applicable" if a patient self-transports to the hospital.~~
- ~~Not Known: (Code 2) = This null value applies if, at the time of patient care documentation, information was "Not Known" to the patient, family, or health care provider. This documents that there was an attempt to obtain information but it was unknown by all parties involved at the time of documentation. For example, injury date and time may be documented in the hospital patient care report as "Unknown".~~
- ~~Not Recorded: (Code 3) = This null value code applies if hospital documentation or an information system has an empty field or nothing is recorded. This null value signifies that the hospital patient care record provides a "place holder" to document the specific data element, but that no value for that element was recorded for the patient. For example, a hospital patient care record may request date of birth, but none was recorded.~~
- Not Applicable: This null value code applies if, at the time of patient care documentation, the information requested was "Not Applicable" to the patient, the hospitalization or the patient care event. For example, variables documenting EMS care would be "Not Applicable" if a patient self-transports to the hospital.
- Not Known/Not Recorded: This null value applies if, at the time of patient care documentation, information was "Not Known" (to the patient, family, health care provider) or no value for the element was recorded for the patient. This documents that there was an attempt to obtain information but it was unknown by all parties or the information was missing at the time of documentation. For example, injury date and time may be documented in the hospital patient care report as "Unknown". Another example, Not Known/Not Recorded should also be coded when documentation was expected, but none was provided (i.e., no EMS run sheet in the hospital record for patient transported by EMS).

Demographic Information

PATIENT'S HOME ZIP CODE (D_01)

D_01

Data Format [text] ***California/National Minimum Element***

Definition: The patient's home ZIP code of primary residence.

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *HomeZip / Zip*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 5 **Maximum Constraint** 10

Field Values

- Relevant value for data element

Additional Information

- Can be stored as a 5 or 9 digit code (XXXXX-XXXX).
- May require adherence to HIPAA regulations.
- See D_06 Alternate Home Residence
- EMS Authority will provide LEMSAs with elective list (FIPS code)

Data Source Hierarchy

1. Billing Sheet / Medical Records Coding Summary Sheet
2. ED Admission Form
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

Uses

- Allows data to be sorted based upon the geographic location of the patient's home.
- If zip code is "Not Applicable", complete variable: Alternate Home Residence.
- If zip code is "Not Recorded/"Not Known", complete variables: Patient's Home Country; Patient's Home State; Patient's Home County and; Patient's Home City.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Common Null Values
- Patient's Home Country D_02
- Patient's Home State D_03
- Patient's Home County D_04
- Patient's Home City D_05
- Alternate Home Residence D_06

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E06_08

PATIENT'S HOME COUNTRY (D_02)

D_02

Data Format [combo] single-choice ***California/National Minimum Element***

Definition: The country where the patient resides.

XSD Data Type *xs:string*	**XSD Element / Domain (Simple Type)** *HomeCountry*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 3 **Maximum Constraint** 3

Field Values

- Relevant value for data element (three digit country code)

Additional Information

- Only completed when ZIP code is "Not Recorded/Not Known".
- Used to calculate FIPS code.
- EMSA will provide LEMSAs with electronic list (FIPS)

Data Source Hierarchy

1. Billing Sheet / Medical Records Coding Summary Sheet
2. ED Admission Form
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

Uses

- Allows data to be sorted based upon the geographic location of the patient's home.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Common Null Values
- Patient's Home State
- Patient's Home County
- Patient's Home City
- Alternate Home Residence

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E06_09

PATIENT'S HOME STATE (D_03)

D_03

Data Format [combo] single-choice ***California/National Minimum Element***

Definition: The state (territory, province, or District of Columbia) where the patient resides.

XSD Data Type *xs:string*
XSD Element / Domain (Simple Type) *HomeState*
Multiple Entry Configuration No
Accepts Null Value Yes, common null values
Required in XSD Yes
Minimum Constraint 2 **Maximum Constraint** 3

Field Values

- Relevant value for data element (two digit FIPS code)

02 Alaska	15 Hawaii	25 Massachusetts	35 New Mexico	46 South Dakota
04 Arizona	16 Idaho	26 Michigan	36 New York	47 Tennessee
05 Arkansas	17 Illinois	27 Minnesota	37 North Carolina	48 Texas
06 California	18 Indiana	28 Mississippi	38 North Dakota	49 Utah
08 Colorado	19 Iowa	29 Missouri	39 Ohio	50 Vermont
09 Connecticut	20 Kansas	30 Montana	40 Oklahoma	51 Virginia
10 Delaware	21 Kentucky	31 Nebraska	41 Oregon	53 Washington
11 District of Columbia	22 Louisiana	32 Nevada	42 Pennsylvania	54 West Virginia
12 Florida	23 Maine	33 New Hampshire	44 Rhode Island	55 Wisconsin
13 Georgia	24 Maryland	34 New Jersey	45 South Carolina	56 Wyoming

Additional Information

- *Only completed* when ZIP code is "Not Recorded/Not Known".
- Used to calculate FIPS code.

Data Source Hierarchy

1. ED Admission Form
2. Billing Sheet / Medical Records Coding Summary Sheet
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

Uses

- Allows data to be sorted based upon the geographic location of the patient's home.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Common Null Values
- Patient's Home Country
- Patient's Home County
- Patient's Home City
- Alternate Home Residence

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E06_07

PATIENT'S HOME COUNTY (D_04)

D_04

Data Format [combo] single-choice ***California/National Minimum Element***

Definition: The patient's county (or parish) of residence.

XSD Data Type *xs:string*
XSD Element / Domain (Simple Type) *HomeCounty*
Multiple Entry Configuration No
Accepts Null Value Yes, common null values
Required in XSD Yes
Minimum Constraint 2 **Maximum Constraint** ~~3~~5

Field Values

001 Alameda	031 Kings	061 Placer	091 Sierra
003 Alpine	033 Lake	063 Plumas	093 Siskiyou
005 Amador	035 Lassen	065 Riverside	095 Solano
007 Butte	037 Los Angeles	067 Sacramento	097 Sonoma
009 Calaveras	039 Madera	069 San Benito	099 Stanislaus
011 Colusa	041 Marin	071 San Bernardino	101 Sutter
013 Contra Costa	043 Mariposa	073 San Diego	103 Tehama
015 Del Norte	045 Mendocino	075 San Francisco	105 Trinity
017 El Dorado	047 Merced	077 San Joaquin	107 Tulare
019 Fresno	049 Modoc	079 San Luis Obispo	109 Tuolumne
021 Glenn	051 Mono	081 San Mateo	111 Ventura
023 Humboldt	053 Monterey	083 Santa Barbara	113 Yolo
025 Imperial	055 Napa	085 Santa Clara	115 Yuba
027 Inyo	057 Nevada	087 Santa Cruz	
029 Kern	059 Orange	089 Shasta	

Additional Information

- Only completed when ZIP code is "Not Recorded/Not Known".
- Used to calculate FIPS code.

Data Source Hierarchy

1. Billing Sheet / Medical Records Coding Summary Sheet
2. ED Admission Form
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

Uses

- Allows data to be sorted based upon the geographic location of the patient's home.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Common Null Values
- Patient's Home Country
- Patient's Home State
- Patient's Home City
- Alternate Home Residence

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E06_06

PATIENT'S HOME CITY (D_05)

D_05

Data Format [combo] single-choice ***California/National Minimum Element***

Definition: The patient's city (or township, or village) of residence.

XSD Data Type *xs:string*	**XSD Element / Domain (Simple Type)** *HomeCity*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 5 **Maximum Constraint** 6

Field Values

- Relevant value for data element (five digit FIPS code)-(*to be provided*).

Additional Information

- Only completed when ZIP code is "Not Recorded/Not Known".
- Used to calculate FIPS code.

Data Source Hierarchy

1. ED Admission Form
2. Billing Sheet / Medical Records Coding Summary Sheet
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

Uses

- Allows data to be sorted based upon the geographic location of the patient's home.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Common Null Values
- Patient's Home Country
- Patient's Home State
- Patient's Home County
- Alternate Home Residence

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E06_05

ALTERNATE HOME RESIDENCE (D_06)

D_06

Data Format [combo] single-choice ***California/National Minimum Element***

Definition: Documentation of the type of patient without a home zip code.

XSD Data Type *xs:integer*
Multiple Entry Configuration No
Required in XSD Yes
XSD Element / Domain (Simple Type) *HomeResidence*
Accepts Null Value Yes, common null values

Field Values

1 Homeless	3 Migrant Worker
2 Undocumented Citizen	4 Foreign Visitor

Additional Information

- Only completed when ZIP code is "Not Applicable".
- See also D_01 Patient's Home Zip Code
- May be coded on patient's chart as V60.0 = homeless
- Homeless is defined as a person who lacks housing. The definition also includes a person living in transitional housing or a supervised public or private facility providing temporary living quarters.
- Undocumented Citizen is defined as a national of another country who has entered or stayed in another country without permission.
- Migrant Worker is defined as a person who temporarily leaves his/her principal place of residence within a country in order to accept seasonal employment in the same country.
- Foreign Visitor is defined as any person visiting a country other than his/her usual place of residence for any reason without intending to receive earnings in the visited country.

Data Source Hierarchy

1. Billing Sheet / Medical Records Coding Summary Sheet
2. ED Admission Form
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

Uses

- Allows data to be sorted based upon type of residence

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Common Null Values
- Patient's Home Country
- Patient's Home State
- Patient's Home County
- Patient's Home City

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E06_05

DATE OF BIRTH (D_07)

Data Format [date] ***California/National Minimum Element Element***

Definition: The patient's date of birth.

XSD Data Type *xs:date*	**XSD Element / Domain (Simple Type)** *DateOfBirth*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 1,890 **Maximum Constraint** 2,030

Field Values

- Relevant value for data element

Additional Information

- Collected as YYYY-MM-DD.
- If less than 24 hours, complete variables: Age and; Age Units.
- If "Not Recorded", or "Not Known" complete variables: Age and; Age Units.
- Used to calculate patient age in days, months, or years then deleted.

Data Source Hierarchy

1. ED Admission Form
2. Billing Sheet / Medical Records Coding Summary Sheet
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

Uses

- Allows data to be sorted based on age.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Patient Age
- Age Units

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E06_16

AGE (D_08)

Data Format [number] ***California/National Minimum Element***

Definition: The patient's age at the time of injury (best approximation).

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *Age*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 1 **Maximum Constraint** 120

Field Values

- Relevant value for data element.

Additional Information

- Used to calculate patient age in hours, days, months, or years.
- Only completed when date of birth is less than 24 hours, "Not Recorded/Not Known".
- Must also complete variable: Age Units
- Patient's age is reported in years, months, days or hours as follows: If the patient is < one day old, the age is reported in hours; If the patient is a less than one month old infant, the age is reported in days; If the patient is a child that is at ≥ 1 month old but < than 2 years old, the age is reported in months.

Data Source Hierarchy

1. ED Admission Form
2. Billing Sheet / Medical Records Coding Summary Sheet
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Date of Birth
- Age Units

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E06_14

AGE UNITS (D_09)

Data Format [combo] single-choice ***California/National Minimum Element***

Definition: The units used to document the patient's age (Years, Months, Days, Hours).

XSD Data Type *xs:integer*
XSD Element / Domain (Simple Type) *AgeUnits*
Multiple Entry Configuration No
Accepts Null Value Yes, common null values
Required in XSD Yes

Field Values

1 Hours	3 Months
2 Days	4 Years

Additional Information

- Used to calculate patient age in hours, days, months, or years.
- Only completed when date of birth is less than 24 hours, "Not Recorded/Not Known.
- Must also complete variable: Age
- May be given as a procedure code
- Patient's age is reported in years, months, days or hours as follows: If the patient is < one day old, the age is reported in hours; If the patient is a less than one month old infant, the age is reported in days; If the patient is a child that is at ≥ 1 month old but < than 2 years old, the age is reported in months.

Data Source Hierarchy

1. ED Admission Form
2. Billing Sheet / Medical Records Coding Summary Sheet
3. Triage Form / Trauma Flow Sheet
4. EMS Run Sheet
5. ED Nurses Notes

Uses

- Allows data to be sorted based upon age.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Date of Birth
- Age

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E06_15

RACE (D_10)

Data Format [combo] single-choice *California/National Minimum Element*

Definition: The patient's race.

XSD Data Type *xs:integer*
Multiple Entry Configuration Yes, max 5
Required in XSD Yes
XSD Element / Domain (Simple Type) *Race*
Accepts Null Value Yes, common null values

Field Values

1 Asian	4 American Indian
2 Native Hawaiian or Other Pacific Islander	5 Black or African American
3 Other Race	6 White

Additional Information

- Patient race should be based upon self-report or identified by a family member

Data Source Hierarchy

1. ED Admission Form
2. Billing Sheet / Medical Records Coding Summary Sheet
3. Triage Form / Trauma Flow Sheet
4. EMS Run Sheet
5. ED Nurses Notes

Uses

- Allows data to be sorted based upon race.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E06_12

ETHNICITY (D_11)

Data Format [combo] single-choice *California/National Minimum Element*

Definition: The patient's ethnicity.

XSD Data Type *xs:integer*
Multiple Entry Configuration Yes, max 3
Required in XSD Yes
XSD Element / Domain (Simple Type) *Ethnicity*
Accepts Null Value Yes, common null values

Field Values

1 Hispanic or Latino	2 Not Hispanic or Latino

Additional Information

- Patient ethnicity should be based upon self-report or identified by a family member
- The maximum number of ethnicities that may be reported for an individual patient is 1.

Data Source Hierarchy

1. ED Admission Form
2. Billing Sheet / Medical Records Coding Summary Sheet
3. Triage Form / Trauma Flow Sheet
4. EMS Run Sheet
5. ED Nurses Notes

Uses

- Allows data to be sorted based upon ethnicity.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E06_13

SEX (D_12)

Data Format [combo] single-choice

California/National Minimum Element

Definition: The patient's sex.

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *Sex*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	

Field Values

1 Male	2 Female

Additional Information

- Patients who have undergone a surgical and/or hormonal sex reassignment should be coded using the current assignment.

Data Source Hierarchy

1. ED Admission Form
2. Billing Sheet / Medical Records Coding Summary Sheet
3. EMS Run Sheet
4. Triage Form / Trauma Flow Sheet
5. ED Nurses Notes

Uses

- Allows data to be sorted based upon gender.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E06_11

Injury Information

INJURY INCIDENT DATE (I_01)

I_01

Data Format [date] ***California/National Minimum Element***

Definition: The date the injury occurred.

XSD Data Type *xs:date*	**XSD Element / Domain (Simple Type)** *IncidentDate*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 1,990 **Maximum Constraint** 2,030

Field Values

- Relevant value for data element.

Additional Information

- Collected as YYYY-MM-DD.
- Estimates of date of injury should be based upon report by patient, witness, family, or health care provider. Other proxy measures (e.g., 911 call time) should not be used.
- ~~If date of injury is "Not Recorded" or "Not Known", the null value is blank (or empty).~~
- If the date is electronically stored within a database or transmitted via XML as a "tick, mark, or marker" the referenced variables may also be used.

Data Source Hierarchy

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

Uses

- Important to identify when the injury event started to better analyze resource utilization and outcomes.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E05_01

INJURY INCIDENT TIME (I_02)

Data Format [time] ***California/National Minimum Element***

Definition: The time the injury occurred.

XSD Data Type *xs:time*	**XSD Element / Domain (Simple Type)** *IncidentTime*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	

Field Values

- Relevant value for data element.

Additional Information

- Collected as HH:MM.
- HH:MM should be collected as military time.
- Estimates of time of injury should be based upon report by patient, witness, family, or health care provider. Other proxy measures (e.g., 911 call time) should not be used.
- ~~If time of injury is "Not Reported" or "Not Known," the null value is blank (or empty).~~
- If the time is electronically stored within a database or transmitted via XML as a "tick, mark, or marker" the referenced variables may also be used.

Data Source Hierarchy

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

Uses

- Important to identify when the injury event started to better analyze resource utilization and outcomes.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E05_01

WORK-RELATED (I_03)

Data Format [combo] single-choice ***California/National Minimum Element***

Definition: Indication of whether the injury occurred during paid employment.

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *WorkRelated*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	

Field Values

1 Yes	2 No

Additional Information

- If work related, two additional data fields must be completed: Patient's Occupational Industry and Patient's Occupation.

Data Source Hierarchy

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

Uses

- Allows one to characterize injuries associated with job environments.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Patient's Occupational Industry
- Patient's Occupation

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E07_15

PATIENT'S OCCUPATIONAL INDUSTRY (I_04)

Data Format [combo] single-choice ***California Elective/National Core Minimum Element***

Definition: The occupational industry associated with the patient's work environment.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *PatientsOccupationalIndustry*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 Finance, Insurance, and Real Estate	8 Construction
2 Manufacturing	9 Government
3 Retail Trade	10 Natural Resources and Mining
4 Transportation and Public Utilities	11 Other Services
5 Agriculture, Forestry, Fishing	12 Wholesale ~~and Retail Trade~~
6 Professional and Business Services	13 Leisure and Hospitality
7 Education and Health Services	14 Other Services

Additional Information

- Only completed if injury is work-related.
- If work related, also complete Patient's Occupation.
- Based upon US Bureau of Labor Statistics Industry Classification.

Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. EMS Run Sheet
3. ED Nurses Notes

Uses

- Can be used to better describe injuries associated with work environments.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Work-related
- Patient's occupation

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E07_16

PATIENT'S OCCUPATION (I_05)

Data Format [combo] single-choice ***California/National Minimum Element***

Definition: The occupation of the patient.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *PatientsOccupation*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 Business and Financial Operations Occupations	13 Computer and Mathematical Occupations
2 Architecture and Engineering Occupations	14 Life, Physical, and Social Science Occupations
3 Community and Social Services Occupations	15 Legal Occupations
4 Education, Training, and Library Occupations	16 Arts, Design, Entertainment, Sports, and Media
5 Healthcare Practitioners and Technical Occupations	17 Healthcare Support Occupations
6 Protective Service Occupations	18 Food Preparation and Serving Related
7 Building and Grounds Cleaning and Maintenance	19 Personal Care and Service Occupations
8 Sales and Related Occupations	20 Office and Administrative Support Occupations
9 Farming, Fishing, and Forestry Occupations	21 Construction and Extraction Occupations
10 Installation, Maintenance, and Repair Occupations	22 Production Occupations
11 Transportation and Material Moving Occupations	23 Military Specific Occupations
12 Management Occupations	

Additional Information

- Only completed if injury is work-related.
- If work related, also complete Patient's Occupational Industry.
- Based upon 1999 US Bureau of Labor Statistics Standard Occupational Classification (SOC).

Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. EMS Run Sheet
3. ED Nurses Notes

Uses

- Can be used to better describe injuries associated with work environments.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Work-related
- Patient's occupational industry

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E07_17

PRIMARY E-CODE (I_06)

Data Format [number] ***California/National Minimum Element***

Definition: E-code used to describe the mechanism (or external factor) that caused the injury event.

XSD Data Type *xs:string*	**XSD Element / Domain (Simple Type)** *PrimaryEcode*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 3 **Maximum Constraint** 5

Field Values

- Relevant ICD-9-CM code value for injury event

Additional Information

- The Primary E-code should describe the main reason a patient is admitted to the hospital.
- E-codes are used to auto-generate two calculated fields: Trauma Type: (Blunt ad Penetrating, ~~Burn~~) and Intentionality (based upon CDC matrix).
- ICD-9-CM Codes were retained over ICD-10 due to CMS's continued use of ICD-9.

Data Source Hierarchy

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. Billing Sheet / Medical Records Coding Summary Sheet
4. ED Nurses Notes

Uses

- Allows injuries to be characterized by mechanism causing the injury.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Secondary E-code
- Additional E-code

LOCATION E-CODE (I_07)

Data Format [number] ***California/National Minimum Element***

Definition: E-code used to describe the place/site/location of the injury event (E 849.X).

XSD Data Type *xs:string*	**XSD Element / Domain (Simple Type)** *LocationEcode*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** ~~3~~0 **Maximum Constraint** ~~5~~9

Field Values

- Relevant ICD-9-CM code value for injury event

Additional Information

- ICD-9-CM Codes were retained over ICD-10 due to CMS's continued use of ICD-9.

Data Source Hierarchy

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. Billing Sheet / Medical Records Coding Summary Sheet
4. ED Nurses Notes

Uses

- Allows injuries to be characterized by the place/site/location of the injury.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Primary E-code
- Additional E-code

ADDITIONAL E-CODE (I_08)

Data Format [number] ***California/National Minimum Element***

Definition: Additional E-code used to describe, for example, a mass casualty event, or other external cause.

XSD Data Type *xs:string*	**XSD Element / Domain (Simple Type)** *AdditionalEcode*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 3 **Maximum Constraint** 5

Field Values

- Relevant ICD-9-CM code value for injury event

Additional Information

- E-codes are used to auto-generate two calculated fields: Trauma Type: (Blunt and Penetrating, ~~Burn~~) and Intentionality (based upon CDC matrix).
- ICD-9-CM Codes were retained over ICD-10 due to CMS's continued use of ICD-9.

Uses

- Allows injuries to be characterized by external cause or presence of a mass casualty event.

Data Source Hierarchy

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. Billing Sheet / Medical Records Coding Summary Sheet
4. ED Nurses Notes

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Primary E-code
- Secondary E-code

INCIDENT LOCATION ZIP CODE (I_09)

I_09

Data Format [text] ***California/National Minimum Element***

Definition: The ZIP code of the incident location.

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *InjuryZip / Zip*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 5 **Maximum Constraint** 10

Field Values

- Relevant value for data element

Additional Information

- Can be stored as a 5 or 9 digit code (XXXXX-XXXX).
- If "Not Applicable", "Not Recorded/Not Known" complete variables: Incident State; Incident County and; Incident City.
- May require adherence to HIPAA regulations.

Data Source Hierarchy

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

Uses

- Allows data to be sorted based upon the geographic location of the injury event.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E08_15

INCIDENT STATE (I_11)

Data Format [combo] single-choice *California/National Minimum Element*

Definition: The state, territory, or province where the patient was found or to which the unit responded

XSD Data Type *xs:string*
XSD Element / Domain (Simple Type) *IncidentState*
Multiple Entry Configuration No
Accepts Null Value Yes, common null values
Required in XSD Yes
Minimum Constraint 2 **Maximum Constraint** 3

Field Values

02 Alaska	15 Hawaii	25 Massachusetts	35 New Mexico	46 South Dakota
04 Arizona	16 Idaho	26 Michigan	36 New York	47 Tennessee
05 Arkansas	17 Illinois	27 Minnesota	37 North Carolina	48 Texas
06 California	18 Indiana	28 Mississippi	38 North Dakota	49 Utah
08 Colorado	19 Iowa	29 Missouri	39 Ohio	50 Vermont
09 Connecticut	20 Kansas	30 Montana	40 Oklahoma	51 Virginia
10 Delaware	21 Kentucky	31 Nebraska	41 Oregon	53 Washington
11 District of Columbia	22 Louisiana	32 Nevada	42 Pennsylvania	54 West Virginia
12 Florida	23 Maine	33 New Hampshire	44 Rhode Island	55 Wisconsin
13 Georgia	24 Maryland	34 New Jersey	45 South Carolina	56 Wyoming

Additional Information

- Only completed when Incident Location ZIP code is "Not Applicable", "Not Recorded/Not Known".
- Used to calculate FIPS code.

Data Source Hierarchy

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

Uses

- Allows data to be sorted based upon the geographic location of the patient's home.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record

Other Associated Elements

- Incident County
- Incident City

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E08_14

INCIDENT COUNTY (I_12)

Data Format [combo] single-choice *California/National Minimum Element*

Definition: The county or parish where the patient was found or to which the unit responded (or best approximation).

XSD Data Type *xs:string* **XSD Element / Domain (Simple Type)** *IncidentCounty*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes **Minimum Constraint** ~~2~~3 **Maximum Constraint** ~~2~~5

Field Values

- Enter location

001 Alameda	031 Kings	061 Placer	091 Sierra
003 Alpine	033 Lake	063 Plumas	093 Siskiyou
005 Amador	035 Lassen	065 Riverside	095 Solano
007 Butte	037 Los Angeles	067 Sacramento	097 Sonoma
009 Calaveras	039 Madera	069 San Benito	099 Stanislaus
011 Colusa	041 Marin	071 San Bernardino	101 Sutter
013 Contra Costa	043 Mariposa	073 San Diego	103 Tehama
015 Del Norte	045 Mendocino	075 San Francisco	105 Trinity
017 El Dorado	047 Merced	077 San Joaquin	107 Tulare
019 Fresno	049 Modoc	079 San Luis Obispo	109 Tuolumne
021 Glenn	051 Mono	081 San Mateo	111 Ventura
023 Humboldt	053 Monterey	083 Santa Barbara	113 Yolo
025 Imperial	055 Napa	085 Santa Clara	115 Yuba
027 Inyo	057 Nevada	087 Santa Cruz	
029 Kern	059 Orange	089 Shasta	

Additional Information

- Only completed when Incident Location ZIP code is "Not Applicable", "Not Recorded/Not Known".
- Used to calculate FIPS code.

Uses

- Allows data to be sorted based upon the geographic location of the patient's home.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Incident State
- Incident City

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5- E08_13

INCIDENT CITY (I_13)

Data Format [combo] single-choice *California/National Minimum Element*

Definition: The city or township where the patient was found or to which the unit responded (or best approximation).

XSD Data Type *xs:string*	**XSD Element / Domain (Simple Type)** *IncidentCity*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 5 **Maximum Constraint** 6

Field Values

- Relevant value for data element (five digit FIPS code)

Additional Information

- Only completed when Incident Location ZIP code is "Not Applicable", "Not Recorded/"Not Known".
- Used to calculate FIPS code
- Local EMS agencies will be provided an electronic listing of FIPS city codes by EMSA.

Data Source Hierarchy

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

Uses

- Allows data to be sorted based upon the geographic location of the patient's home.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record. An electronic listing of FIPS codes will be provided by the EMS Authority.

Other Associated Elements

- Incident State
- Incident County

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E08_12

PROTECTIVE DEVICES (I_14)

Data Format [combo] multiple-choice ***California/National Minimum Element***

Definition: Protective devices (safety equipment) in use or worn by the patient at the time of the injury.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *ProtectiveDevices*
Multiple Entry Configuration Yes, unbounded **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 None	7 Helmet (e.g., bicycle, skiing, motorcycle)
2 Lap Belt	8 Airbag
3 Personal Floatation Device	9 Protective Clothing (e.g., padded leather pants)
4 Protective Non-Clothing Gear (e.g., shin guard)	10 Shoulder Belt
5 Eye Protection	11 Other
6 Child Restraint (booster seat, child car seat)	

Additional Information

- Check all that apply.
- If "Child Restraint" is present, complete variable "Child Specific Restraint."
- If "Airbag" is present, complete variable "Airbag Deployment."
- Evidence of the use of safety equipment may be reported or observed.
- Lap Belt should be used to include those patients that are restrained, but not further specified.
- If chart indicates "3 point restraint" choose 2 and 10.

Data Source Hierarchy

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

Uses

- Used to better define injury cause and characterize injury patterns.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Airbag Deployment
- Child Specific Restraint

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 – E10_08

CHILD SPECIFIC RESTRAINT (I_15)

Data Format [combo] single-choice ***California/National Minimum Element***

Definition: Protective child restraint devices used by patient at the time of injury.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *ChildSpecificRestraint*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 Child Car Seat	3 Child Booster Seat
2 Infant Car Seat	

Additional Information

- Evidence of the use of child restraint may be reported or observed.
- Only completed when Protective Devices include "Child Restraint" (I_14)

Data Source Hierarchy

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

Uses

- Used to better define injury cause and characterize injury patterns.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Protective Devices

AIRBAG DEPLOYMENT (I_16)

Data Format [combo] multiple-choice ***California/National Minimum Element***

Definition: Indication of an airbag deployment during a motor vehicle crash.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *AirbagDeployment*
Multiple Entry Configuration Yes **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 No Airbag Deployed	3 Airbag Deployed Side
2 Airbag Deployed Front	4 Airbag Deployed Other (knee, airbelt, curtain, etc.)

Additional Information

- Check all that apply.
- Evidence of the use of airbag deployment may be reported or observed.
- Only completed when Protective Devices include “Airbag” (I_14)
- Airbag Deployed Front should be used for patients with documented airbag deployments, but are not further specified.

Data Source Hierarchy

1. EMS Run Sheet
2. Triage Form / Trauma Flow Sheet
3. ED Nurses Notes

Uses

- Used to better define injury cause and characterize injury patterns.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Protective Devices

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 – E10_09

Pre-hospital Information

EMS DISPATCH DATE (P_01)

P_01

Data Format [date] ***California/National Minimum Element***

Definition: The date the unit transporting to your hospital was notified by dispatch.

XSD Data Type *xs:date*	**XSD Element / Domain (Simple Type)** *EmsNotifyDate*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 1,990 **Maximum Constraint** 2,030

Field Values

- Relevant value for data element.

Additional Information

- Collected as YYYY-MM-DD
- If the date is electronically stored within a database or transmitted via XML as a "tick, mark, or marker" the referenced variables may also be used.
- Used to auto-generate an additional calculated field: Total EMS Time (elapsed time from EMS dispatch to hospital arrival).

Data Source Hierarchy

1. EMS Run Sheet

Uses

- Allows data to be sorted based upon EMS agency time intervals.

Data Collection

- 911 or Dispatch Center and electronically or verbally transmitted to the EMS agency.

Other Associated Elements

- EMS Unit Arrival on Scene Date and Time
- EMS Unit Left Scene Date and Time

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E05_04

EMS DISPATCH TIME (P_02)

P_02

Data Format [time] ***California/National Minimum Element***

Definition: The time the unit transporting to your hospital was notified by dispatch.

- For inter facility transfer patients, this is the time at which the unit transporting the patient to your facility from the transferring facility was notified by dispatch.
- For patients transported from the scene of injury to your hospital, this is the time at which the unit transporting the patient to your facility from the scene was dispatched.

XSD Data Type *xs:time*
XSD Element / Domain (Simple Type) *EmsNotifyTime*
Multiple Entry Configuration No
Accepts Null Value Yes, common null values
Required in XSD Yes

Field Values

- Relevant value for data element.

Additional Information

- Collected as HH:MM.
- HH:MM should be collected as military time.
- If the time is electronically stored within a database or transmitted via XML as a "tick, mark, or marker" the referenced variables may also be used.
- Used to auto-generate an additional calculated field: Total EMS Time (elapsed time from EMS dispatch to hospital arrival).

Data Source Hierarchy

1. EMS Run Sheet

Uses

- Allows data to be sorted based upon EMS agency time intervals.

Data Collection

- 911 or Dispatch Center and electronically or verbally transmitted to the EMS agency.

Other Associated Elements

- EMS Unit Arrival on Scene Date and Time
- EMS Unit Left Scene Date and Time

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E05_04

EMS UNIT ARRIVAL ON SCENE DATE (P_03)

P_03

Data Format [date/time] ***California/National Minimum Element***

De finition: The date the unit transporting to your hospital arrived on the scene/transferring facility (the time the vehicle stopped moving).

- For inter facility transfer patients, this is the date on which the unit transporting the patient to your facility from the transferring facility arrived at the transferring facility (arrival is defined at date/time when the vehicle stopped moving).
- For patients transported from the scene of injury to your hospital, this is the date on which the unit transporting the patient to your facility from the scene arrived at the scene (arrival is defined at date/time when the vehicle stopped moving).

XSD Data Type *xs:date*	**XSD Element / Domain (Simple Type)** *EmsArrivalDate*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 1,990 **Maximum Constraint** 2,030

Field Values

- Relevant value for data element.

Additional Information

- Collected as YYYY-MM-DD
- Scene may be defined as “initial hospital” for inter-facility transfers.
- If the date is electronically stored within a database or transmitted via XML as a “tick, mark, or marker”, the referenced variables may also be used.
- Used to auto-generate two additional calculated fields: Total EMS Response Time (elapsed time from EMS dispatch to scene arrival) & Total EMS Scene Time (elapsed time from EMS scene arrival to scene departure). For IFT (Inter-facility transport), the scene is defined as the sending facility.

Data Source Hierarchy

1. EMS Run Sheet

Uses

- Allows data to be sorted based upon EMS agency time intervals.

Data Collection

- 911 or Dispatch Center and electronically or verbally transmitted to the EMS agency.

Other Associated Elements

- EMS Unit Dispatch Date and Time
- EMS Unit Left Scene Date and Time

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E05_06

EMS UNIT ARRIVAL ON SCENE TIME (P_04)

P_04

Data Format [date/time] ***California/National Minimum Element***

Definition: The time the unit transporting to your hospital arrived on the scene (the time the vehicle stopped moving).

XSD Data Type *xs:time*
Multiple Entry Configuration No
Required in XSD Yes
XSD Element / Domain (Simple Type) *EmsArrivalTime*
Accepts Null Value Yes, common null values

Field Values

- Relevant value for data element.

Additional Information

- Collected as HH:MM.
- Scene may be defined as "initial hospital" for inter-facility transfers.
- HH:MM should be collected as military time.
- If the time is electronically stored within a database or transmitted via XML as a "tick. mark or marker" the referenced variables may also be used.
- Used to auto-generate two additional calculated fields: Total EMS Response Time (elapsed time from EMS dispatch to scene arrival) & Total EMS Scene Time (elapsed time from EMS scene arrival to scene departure).

Data Source Hierarchy

1. EMS Run Sheet

Uses

- Allows data to be sorted based upon EMS agency time intervals.

Data Collection

- 911 or Dispatch Center and electronically or verbally transmitted to the EMS agency.

Other Associated Elements

- EMS Unit Dispatch Date and Time
- EMS Unit Left Scene Date and Time

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E05_06

EMS UNIT SCENE DEPARTURE DATE (P_05)

P_05

Data Format [date/time] ***California/National Minimum Element***

Definition: The date the unit transporting to your hospital left the scene.

XSD Data Type *xs:date*	**XSD Element / Domain (Simple Type)** *EmsLeftDate*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 1,990 **Maximum Constraint** 2,030

Field Values

- Relevant value for data element.

Additional Information

- Collected as YYYY-MM-DD
- Scene may be defined as “initial hospital” for inter-facility transfers.
- If the date is electronically stored within a database or transmitted via XML as a “tick, mark, or marker,” the referenced variables may also be used.
- Used to auto-generate an additional calculated field: Total EMS Scene Time (elapsed time from EMS scene arrival to scene departure).

Data Source Hierarchy

1. EMS Run Sheet

Uses

- Allows data to be sorted based upon EMS agency time intervals.

Data Collection

- 911 or Dispatch Center and electronically or verbally transmitted to the EMS agency.

Other Associated Elements

- EMS Dispatch Date and Time
- EMS Unit Arrival on Scene Date and Time

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E05_09

EMS UNIT SCENE DEPARTURE TIME (P_06)

P_06

Data Format [time] ***California/National Minimum Element***

Definition: The time the unit transporting to your hospital left the scene (the time the vehicle started moving).

XSD Data Type *xs:time*	**XSD Element / Domain (Simple Type)** *EmsLeftTime*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	

Field Values

- Relevant value for data element.

Additional Information

- Collected as HH:MM.
- Scene may be defined as "initial hospital" for inter-facility transfers.
- HH:MM should be collected as military time.
- If the time is electronically stored within a database or transmitted via XML as a "tick, mark or marker," the referenced variables may also be used.
- Used to auto-generate an additional calculated field: Total EMS Scene Time (elapsed time from EMS scene arrival to scene departure).

Data Source Hierarchy

1. EMS Run Sheet

Uses

- Allows data to be sorted based upon EMS agency time intervals.

Data Collection

- 911 or Dispatch Center and electronically or verbally transmitted to the EMS agency.

Other Associated Elements

- EMS Dispatch Date and Time
- EMS Unit Arrival on Scene Date and Time

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 - E05_09

TRANSPORT MODE (P_07)

P_07

Data Format [combo] single-choice

California/National Minimum Element

Definition: The mode of transport delivering the patient to your hospital.

XSD Data Type *xs:integer*
XSD Element / Domain (Simple Type) *TransportMode*
Multiple Entry Configuration No
Accepts Null Value Yes, common null values
Required in XSD Yes

Field Values

1 Ground Ambulance	4 Private/Public Vehicle/Walk-in
2 Helicopter Ambulance	5 Police
3 Fixed-wing Ambulance	6 Other

Data Source Hierarchy

1. EMS Run Sheet

Uses

- Allows data to be evaluated based on mode of transport utilized to reach the hospital.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Inter-faculty Transfer
- Other Transport Mode

OTHER TRANSPORT MODE (P_08)

P_08

Data Format [combo] multiple-choice ***California/National Minimum Element***

Definition: All other modes of transport used during patient care event, except the mode delivering the patient to the hospital.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *OtherTransportMode*
Multiple Entry Configuration Yes, max 5 **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 Ground Ambulance	4 Private/Public Vehicle/Walk-in
2 Helicopter Ambulance	5 Police
3 Fixed-wing Ambulance	6 Other

Data Source Hierarchy

1. EMS Run Sheet

Uses

- Allows data to be evaluated based on mode of transport utilized to reach the hospital.
- A total of five other transport segments (different or similar modes) may be recorded.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Inter-faculty Transfer
- Transport Mode

INITIAL FIELD SYSTOLIC BLOOD PRESSURE (P_09)

P_09

Data Format [number] ***California/National Minimum Element***

Definition: First recorded systolic blood pressure in the pre-hospital setting.

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *EmsSbp*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 0 **Maximum Constraint** 400

Field Values

- Relevant value for data element.

Additional Information

- Used to auto-generate an additional calculated field: Revised Trauma Score - EMS (adult & pediatric).
- If the patient is transferred to your facility with no EMS run sheet from the scene of injury, record as Not Known/Not Recorded.

Data Source Hierarchy

1. EMS Run Sheet

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Initial Field Pulse Rate
- Initial Field Respiratory Rate
- Initial Field SaO2
- Initial Field GCS - Eye
- Initial Field GCS - Verbal
- Initial Field GCS - Motor
- Initial Field GCS- Total

References to Other Databases

- Compare to NHTSA (NEMSIS) V 2.2.5 – E14_04

INITIAL FIELD PULSE RATE (P_10)

P_10

Data Format [number] ***California/National Minimum Element***

Definition: First recorded pulse in the pre-hospital setting (palpated or auscultated), expressed as a number per minute.

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *EmsPulseRate*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 0 **Maximum Constraint** 400

Field Values

- Relevant value for data element

Additional Information

- If the patient is transferred to your facility with no EMS run sheet from the scene of injury, record as Not Known/Not Recorded.

Data Source Hierarchy

1. EMS Run Sheet

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Initial Field Systolic Blood Pressure
- Initial Field Respiratory Rate
- Initial Field SaO2
- Initial Field GCS - Eye
- Initial Field GCS - Verbal
- Initial Field GCS - Motor
- Initial Field GCS- Total

References to Other Databases

- Compare to NHTSA (NEMSIS) V 2.2.5 – E14_07

INITIAL FIELD RESPIRATORY RATE (P_11)

Data Format [number] ***California/National Minimum Element***

Definition: First recorded unassisted respiratory rate in the pre-hospital setting (expressed as a number per minute).

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *EmsRespiratoryRate*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 0 **Maximum Constraint** 99~~100~~

Field Values

- Relevant value for data element.

Additional Information

- Used to auto-generate an additional calculated field: Revised Trauma Score - EMS (adult & pediatric).
- If the patient is transferred to your facility with no EMS run sheet from the scene of injury, record as Not Known/Not Recorded.

Data Source Hierarchy

1. EMS Run Sheet

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Initial Field Systolic Blood Pressure
- Initial Field Pulse Rate
- Initial Field SaO2
- Initial Field GCS - Eye
- Initial Field GCS - Verbal
- Initial Field GCS - Motor
- Initial Field GCS- Total

References to Other Databases

- Compare to NHTSA (NEMSIS) V 2.2.5 – E14_11

INITIAL FIELD OXYGEN SATURATION (P_12)

P_12

Data Format [number] ***California/National Minimum Element***

Definition: First recorded oxygen saturation in the pre-hospital setting (expressed as a percentage).

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *EmsPulseOximetry*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 0 **Maximum Constraint** 100

Field Values

- Relevant value for data element.

Additional Information

- If the patient is transferred to your facility with no EMS run sheet from the scene of injury, record as Not Known/Not Recorded.

Data Source Hierarchy

1. EMS Run Sheet

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Initial Field Systolic Blood Pressure
- Initial Field Pulse Rate
- Initial Field Respiratory Rate
- Initial Field GCS - Eye
- Initial Field GCS - Verbal
- Initial Field GCS - Motor
- Initial Field GCS- Total

References to Other Databases

- Compare to NHTSA (NEMSIS) V 2.2.5 – E14_09

INITIAL FIELD GCS – EYE (P_13)

P_13

Data Format [number] ***California/National Minimum Element***

Definition: First recorded Glasgow Coma Score (Eye) in the pre-hospital setting.

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *EmsGcsEye*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 1 **Maximum Constraint** 4

Field Values

1 No eye movement when assessed	3 Opens eyes in response to verbal stimulation
2 Opens eyes in response to painful stimulation	4 Opens eyes spontaneously

Additional Information

- Used to calculate Overall GCS - EMS Score.
- If the patient is transferred to your facility with no EMS run sheet from the scene of injury, record as Not Known/Not Recorded.

Data Source Hierarchy

1. EMS Run Sheet

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Initial Field Systolic Blood Pressure
- Initial Field Pulse Rate
- Initial Field respiratory rate
- Initial Field SaO2
- Initial Field GCS - Verbal
- Initial Field GCS - Motor
- Initial Field GCS- Total

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 – E14_15

INITIAL FIELD GCS – VERBAL (P_14)

P_14

Data Format [number] ***California/National Minimum Element***

Definition: First recorded Glasgow Coma Score (Verbal) in the pre-hospital setting.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *EmsGcsVerbal*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes **Minimum Constraint** 1 **Maximum Constraint** 5

Field Values

Pediatric (≤ 2 years):	
1 No vocal response	4 Cries but is consolable, inappropriate interactions
2 Inconsolable, agitated	5 Smiles, oriented to sounds, follows objects, Interacts
3 Inconsistently consolable, moaning	
Adult:	
1 No verbal response	4 Confused
2 Incomprehensible sounds	5 Oriented
3 Inappropriate words	

Additional Information

- Used to calculate Overall GCS - EMS Score.
- If the patient is transferred to your facility with no EMS run sheet from the scene of injury, record as Not Known/Not Recorded.

Data Source Hierarchy

1. EMS Run Sheet

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Initial Field Systolic Blood Pressure
- Initial Field respiratory rate
- Initial Field Pulse Rate
- Initial Field SaO2
- Initial Field GCS - Eye
- Initial Field GCS - Motor
- Initial Field GCS- Total

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 – E14_16

INITIAL FIELD GCS – MOTOR (P_14)

Data Format [number] ***California/National Minimum Element***

Definition: First recorded Glasgow Coma Score (Motor) in the pre-hospital setting.

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *EmsGcsMotor*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 1 **Maximum Constraint** 6

Field Values

Pediatric (≤ 2 years):	
1 No motor response	4 Withdrawal from pain
2 Extension to pain	5 Localizing pain
3 Flexion to pain	6 Appropriate response to stimulation
Adult:	
1 No motor response	4 Withdrawal from pain
2 Extension to pain	5 Localizing pain
3 Flexion to pain	6 Obeys commands

Additional Information

- Used to calculate Overall GCS - EMS Score.
- If the patient is transferred to your facility with no EMS run sheet from the scene of injury, record as Not Known/Not Recorded.

Data Source Hierarchy

1. EMS Run Sheet

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Initial Field Systolic Blood Pressure
- Initial Field respiratory rate
- Initial Field Pulse Rate
- Initial Field SaO2
- Initial Field GCS - Eye
- Initial Field GCS - Verbal
- Initial Field GCS- Total

References to Other Databases

- NHTSA (NEMSIS) V 2.2.5 – E14_17

INITIAL FIELD GCS – TOTAL (P_16)

Data Format [number] ***California/National Minimum Element***

P_16

Definition: First recorded Glasgow Coma Score (total) in the pre-hospital setting.

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *EmsTotalGcs*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** ~~1~~3 **Maximum Constraint** 15

Field Values

- Relevant value for data element.

Additional Information

- Utilize only if total score is available without component scores.
- Used to auto-generate an additional calculated field: Revised Trauma Score - EMS (adult & pediatric).
- If the patient is transferred to your facility with no EMS run sheet from the scene of injury, record as Not Known/Not Recorded.
- If a patient does not have a numeric GCS recorded, but with documentation related to their level of consciousness such as “AAOx3”, “awake alert and oriented”, or “patient with normal mental status”, interpret this as GCS of 15 IF there is not other contraindicating documentation.

Data Source Hierarchy

1. EMS Run Sheet

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Initial Field Systolic Blood Pressure
- Initial Field Pulse Rate
- Initial Field respiratory rate
- Initial Field SaO2
- Initial Field GCS - Eye
- Initial Field GCS - Verbal
- Initial Field GCS - Motor

References to Other Databases

- Compare to NHTSA (NEMSIS) V 2.2.5 – E14_19

INTER-FACILITY TRANSFER IN FOR HIGHER LEVEL OF TRAUMA CARE (P_17)

P_17

Data Format [combo] single-choice ***California/National Minimum Element***

Definition: ~~The interfacility transfer of a trauma patient from non-trauma center or other trauma center for higher level (greater level of trauma resources) of trauma care.~~ Was the patient transferred to your facility for trauma services from another acute care facility?

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *InterFacilityTransfer* ~~*HospitalDischargeDisposition*~~

Multiple Entry Configuration No **Accepts Null Value** Yes, common null values

Required in XSD Yes

Field Values

1 Yes	2 No

Additional Information

- Patients transferred from a private doctor's office, stand-alone ambulatory surgery center, or delivered to your hospital by a non-EMS transport is not considered an inter-facility transfer.
- Outlying facilities purporting to provide emergency care services or utilized to stabilize a patient are considered acute care facilities.

Data Source Hierarchy

1. EMS Run Sheet
2. EMS or hospital records or electronically through linkage with the EMS/medical record.

Uses

- Allows data to be evaluated based on presence of an inter-facility transfer.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

TRANSFER OUT FOR HIGHER LEVEL OF TRAUMA CARE (CA_04)

Data Format [combo] single-choice ***California Minimum Element***

Definition: The interfacility transfer of a trauma patient from your facility to other trauma center for higher level (greater level of trauma resources) of trauma care.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *HospitalDischargeDisposition*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 Yes	2 No~~3 Unknown/Not documented~~

Data Source Hierarchy

3. EMS Run Sheet
4. EMS or hospital records or electronically through linkage with the EMS/medical record.

Data Collection

- Transfer in for Higher Level of Trauma Care (Hospital Receiving)-CA_03

Other Associated Elements

- Transport Mode
- Other Transport Mode
- ED Discharge-ED_17

Emergency Department Information

ED/HOSPITAL ARRIVAL DATE (ED_01)

Data Format [date] ***California/National Minimum Element***

ED_01

Definition: The date the patient arrived to the ED/hospital.

XSD Data Type *xs:date*		**XSD Element / Domain (Simple Type)** *HospitalArrivalDate*	
Multiple Entry Configuration No		**Accepts Null Value** Yes, common null values	
Required in XSD Yes		**Minimum Constraint** 1,990	**Maximum Constraint** 2,030

Field Values

- Relevant value for data element.

Additional Information

- If the patient was brought to the ED, enter date patient arrived at ED. If patient was directly admitted to the hospital, enter date patient was admitted to the hospital.
- Collected as YYYY-MM-DD.
- If the date is electronically stored within a database or transmitted via XML as a "tick, mark, or marker," the referenced variables may also be used.
- Used to auto-generate two additional calculated fields: Total EMS Time: (elapsed time from EMS dispatch to hospital arrival) and Total Length of Hospital Stay (elapsed time from ED/Hospital Arrival to ED/Hospital Discharge).

Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. ED Record
3. Billing Sheet / Medical Records Coding Summary Sheet
4. Hospital Discharge Summary

Uses

- Allows data to be sorted based upon total length of hospital stay.

Data Collection

- 911 or Dispatch Center and electronically or verbally transmitted to the EMS agency.

Other Associated Elements

- EMS Dispatch Date/ Time E 05_04
- EMS Unit Arrival on Scene Date/ Time E 05_06
- Patient Arrived at Destination Date/Time E05_10

ED/HOSPITAL ARRIVAL TIME (ED_02)

Data Format [time] ***California/National Minimum Element***

Definition: The time the patient arrived to the ED/hospital.

XSD Data Type *xs:time* **XSD Element / Domain (Simple Type)** *HospitalArrivalTime*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

- Relevant value for data element.

Additional Information

- If the patient was brought to the ED, enter time patient arrived at ED. If patient was directly admitted to the hospital, enter time patient was admitted to the hospital.
- Collected as HH:MM.
- HH:MM should be collected as military time.
- If the time is electronically stored within a database or transmitted via XML as a "tick, mark or marker," the referenced variables may also be used.
- Used to auto-generate two additional calculated fields: Total EMS Time: (elapsed time from EMS dispatch to hospital arrival) and Total Length of Hospital Stay (elapsed time from ED/Hospital Arrival to ED/Hospital Discharge).

Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. ED Record
3. Billing Sheet / Medical Records Coding Summary Sheet
4. Hospital Discharge Summary

Uses

- Allows data to be sorted based upon total length of hospital stay.

Data Collection

- 911 or Dispatch Center and electronically or verbally transmitted to the EMS agency.

Other Associated Elements

- EMS Dispatch Date/ Time E05_04
- EMS Unit Arrival on Scene Date/ Time E 05_06
- Patient Arrived at Destination Date/ Time E05_10

INITIAL ED/HOSPITAL SYSTOLIC BLOOD PRESSURE (ED_03)

ED_03

Data Format [number] ***California/National Minimum Element***

Definition: First recorded systolic blood pressure in the ED/hospital.

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *Sbp*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 0 **Maximum Constraint** 400

Field Values

- Relevant value for data element.

Additional Information

- Used to auto-generate an additional calculated field: Revised Trauma Score - ED (adult & pediatric).

Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. ED Record

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- Hospital records or electronically through linkage with EMS/medical record or medical device.

Other Associated Elements

- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital Respiratory Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital SaO2
- Initial ED/Hospital GCS - Eye
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS- Total
- Initial ED/Hospital GCS Assessment Qualifiers

INITIAL ED/HOSPITAL PULSE RATE (ED_04)

ED_04

Data Format [number] ***California/National Minimum Element***

Definition: First recorded pulse in the ED/hospital (palpated or auscultated), expressed as a number per minute.

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *PulseRate*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 0 **Maximum Constraint** 400

Field Values

- Relevant value for data element.

Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. ED Record

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- Hospital records or electronically through linkage with EMS/medical record or medical device.

Other Associated Elements

- Initial ED/Hospital Systolic Blood Pressure
- Initial ED/Hospital Respiratory Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital SaO2
- Initial ED/Hospital GCS - Eye
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS- Total
- Initial ED/Hospital GCS Assessment Qualifiers

INITIAL ED/HOSPITAL TEMPERATURE (ED_05)

ED_05

Data Format [number] ***California/National Minimum Element***

Definition: First recorded temperature (in degrees Celsius [centigrade]) in the ED/hospital.

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *Temperature*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 0 **Maximum Constraint** 400

Field Values

- Relevant value for data element.

Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. ED Record

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- Hospital records or electronically through linkage with EMS/medical record or medical device.

Other Associated Elements

- Initial ED/Hospital Systolic Blood Pressure
- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital respiratory rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital SaO2
- Initial ED/Hospital GCS - Eye
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS- Total
- Initial ED/Hospital GCS Assessment Qualifiers

INITIAL ED/HOSPITAL RESPIRATORY RATE (ED_06)

ED_06

Data Format [number] ***California/National Minimum Element***

Definition: First recorded respiratory rate in the ED/hospital (expressed as a number per minute).

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *RespiratoryRate*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 0 **Maximum Constraint** 100

Field Values

- Relevant value for data element.

Additional Information

- If available, complete additional field: "Initial ED/Hospital Respiratory Assistance." (ED_07)
- Used to auto-generate an additional calculated field: Revised Trauma Score - ED (adult & pediatric).

Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. ED Record

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- Hospital records or electronically through linkage with EMS/medical record or medical device.

Other Associated Elements

- Initial ED/Hospital Systolic Blood Pressure
- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital SaO2
- Initial ED/Hospital GCS - Eye
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS- Total
- Initial ED/Hospital GCS Assessment Qualifiers

INITIAL ED/HOSPITAL RESPIRATORY ASSISTANCE (ED_07)

ED_07

Data Format [combo] single-choice ***California/National Minimum Element***

Definition: Determination of respiratory assistance associated with the initial ED/hospital respiratory rate.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *RespiratoryAssistance*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 Unassisted Respiratory Rate	2 Assisted Respiratory Rate

Additional Information

- Only completed if a value is provided for "Initial ED/Hospital Respiratory Rate." (ED_06)
- Respiratory Assistance is defined as mechanical and/or external support of respiration.

Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. ED Record

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- Hospital records.

Other Associated Elements

- Initial ED/Hospital Respiratory Rate

INITIAL ED/HOSPITAL OXYGEN SATURATION (ED_08)

ED_08

Data Format [number] ***California/National Minimum Element***

Definition: First recorded oxygen saturation in the ED/hospital (expressed as a percentage).

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *PulseOximetry*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 0 **Maximum Constraint** 100

Field Values

- Relevant value for data element.

Additional Information

- If available, complete additional field: “Initial ED/Hospital Supplemental Oxygen”.(ED_09)

Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. Ed Record

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- Hospital records or electronically through linkage with EMS/medical record or medical device.

Other Associated Elements

- Initial ED/Hospital Supplemental Oxygen
- Initial ED/Hospital Systolic Blood Pressure
- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital Respiratory Rate
- Initial ED/Hospital GCS - Eye
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS- Total
- Initial ED/Hospital GCS Assessment Qualifiers

INITIAL ED/HOSPITAL SUPPLEMENTAL OXYGEN (ED_09)

ED_09

Data Format [combo] single-choice ***California/National Minimum Element***

Definition: Determination of the presence of supplemental oxygen during assessment of initial ED/hospital oxygen saturation level.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *SupplementalOxygen*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 No Supplemental Oxygen	2 Supplemental Oxygen

Additional Information

- Only completed if a value is provided for "Initial ED/Hospital Oxygen Saturation." (ED_08)

Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. ED Record

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- Hospital records.

Other Associated Elements

- Initial ED/Hospital Oxygen Saturation

INITIAL ED/HOSPITAL GCS – EYE (ED_10)

ED_10

Data Format [number] ***California/National Minimum Element***

Definition: First recorded Glasgow Coma Score (Eye) in the ED/hospital.

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *GcsEye*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 1 **Maximum Constraint** 4

Field Values

1 No eye movement when assessed	3 Opens eyes in response to verbal stimulation
2 Opens eyes in response to painful stimulation	4 Opens eyes spontaneously

Additional Information

- Used to calculate Overall GCS - ED Score.

Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. ED Record

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- Hospital records or electronically through linkage with EMS/medical record.

Other Associated Elements

- Initial Systolic Blood Pressure
- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital respiratory rate
- Initial ED/Hospital SaO2
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS- Total
- Initial ED/Hospital GCS Assessment Qualifiers

INITIAL ED/HOSPITAL GCS – VERBAL (ED_11)

Data Format [number] ***California/National Minimum Element***

Definition: First recorded Glasgow Coma Score (Verbal) in the ED/hospital.

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *GcsVerbal*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 1 **Maximum Constraint** 5

Field Values

Pediatric (≤ 2 years):	
1 No vocal response	4 Cries but is consolable, inappropriate interactions
2 Inconsolable, agitated	5 Smiles, oriented to sounds, follows objects, Interacts
3 Inconsistently consolable, moaning	
Adult:	
1 No verbal response	4 Confused
2 Incomprehensible sounds	5 Oriented
3 Inappropriate words	

Additional Information

- Used to calculate Overall GCS - ED Score.

Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. ED Record

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- Hospital records or electronically through linkage with EMS/medical record.

Other Associated Elements

- Initial Systolic Blood Pressure
- Initial ED/Hospital respiratory rate
- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital SaO2
- Initial ED/Hospital GCS - Eye
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS- Total
- Initial ED/Hospital GCS Assessment Qualifiers

INITIAL ED/HOSPITAL GCS – MOTOR (ED_12)

Data Format [number] ***California/National Minimum Element***

Definition: First recorded Glasgow Coma Score (Motor) in the ED/hospital.

XSD Data Type *xs:integer*
XSD Element / Domain (Simple Type) *GCSMotor*
Multiple Entry Configuration No
Accepts Null Value Yes, common null values
Required in XSD Yes
Minimum Constraint 1 **Maximum Constraint** 6

Field Values

Pediatric (≤ 2 years):	
1 No motor response	4 Withdrawal from pain
2 Extension to pain	5 Localizing pain
3 Flexion to pain	6 Appropriate response to stimulation
Adult:	
1 No motor response	4 Withdrawal from pain
2 Extension to pain	5 Localizing pain
3 Flexion to pain	6 Obeys commands

Additional Information

- Used to calculate Overall GCS – ED Score.

Data Source Hierarchy

3. Triage Form / Trauma Flow Sheet
4. ED Record

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- Hospital records or electronically through linkage with EMS/medical record.

Other Associated Elements

- Initial Systolic Blood Pressure
- Initial ED/Hospital Respiratory Rate
- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital SaO2
- Initial ED/Hospital GCS - Eye
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS- Total
- Initial ED/Hospital GCS Assessment Qualifiers

INITIAL ED/HOSPITAL GCS – TOTAL (ED_13)

ED_13

Data Format [number] ***California/National Minimum Element***

Definition: First recorded Glasgow Coma Score (total) in the ED/hospital.

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *TotalGCS*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 1 **Maximum Constraint** 15

Field Values

- Relevant value for data element.

Additional Information

- Utilize only if total score is available without component scores.
- Used to auto-generate an additional calculated field: Revised Trauma Score - ED (adult & pediatric.)

Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. ED Record

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- Hospital records or electronically through linkage with EMS/medical record.

Other Associated Elements

- Initial ED/Hospital Systolic Blood Pressure
- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital respiratory rate
- Initial ED/Hospital SaO2
- Initial ED/Hospital GCS - Eye
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS Assessment Qualifiers

INITIAL ED/HOSPITAL GCS ASSESSMENT QUALIFERS (ED_14)

Data Format [combo] multiple-choice ***California/National Minimum Element***

Definition: Documentation of factors potentially affecting the first assessment of GCS upon arrival in the ED/hospital.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *GCSQualifier*
Multiple Entry Configuration Yes, max 3 **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 Patient Chemically Sedated	3 Patient Intubated
2 Obstruction to the Patient's Eye	

Additional Information

- Identifies treatments given to the patient that may affect the first assessment of GCS. This field does not apply to self-medications the patient may administer (i.e., ETOH, prescriptions, etc.).
- If patient was not chemically sedated, intubated, and did not have eye obstruction then code as Not Applicable.

Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. ED Record
3. EMS Run Sheet

Uses

- Provides documentation of assessment and care.
- Used in quality management for the evaluation of care and EMS Agency Performance.

Data Collection

- Hospital records or electronically through linkage with EMS/medical record.

Other Associated Elements

- Initial ED/Hospital Systolic Blood Pressure
- Initial ED/Hospital Pulse Rate
- Initial ED/Hospital Temperature
- Initial ED/Hospital respiratory rate
- Initial ED/Hospital SaO2
- Initial ED/Hospital GCS - Eye
- Initial ED/Hospital GCS - Verbal
- Initial ED/Hospital GCS - Motor
- Initial ED/Hospital GCS- Total

ALCOHOL USE INDICATOR (ED_15)

Data Format [combo] single-choice ***California/National Minimum Element***
(Modified from National Element ED_15)
Definition: Use of alcohol by the patient.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *AlcoholUseIndicators*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 No (not tested)	3 Yes (confirmed by test [trace levels])
2 No(confirmed by test)	4 Yes (confirmed by test [beyond legal limit])

Additional Information

- Blood alcohol concentration (BAC) may be documented at any facility (or setting) treating this patient event.
- "Trace levels" is defined as any alcohol level below the legal limit, but not zero.
- "Beyond legal limit" is defined as a blood alcohol concentration above the legal limit for the state in which the treating institution is located. Above any legal limit, DUI, DWI or DWAI, would apply here.
- If alcohol use is suspected, but not confirmed by test, record null value "Not Known/Not Recorded".

Data Source Hierarchy

1. Lab Results
2. ED Physician Notes

Uses

- Allows data to be sorted based upon alcohol indicators.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

ALCOHOL LEVEL PRESENT IN BLOOD (CA_01))

CA_01

Data Format [combo] multiple-choice ***California Minimum Element***

Definition: The presence of any ethyl alcohol in blood obtained from patient for laboratory examination.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)**
Multiple Entry Configuration Yes, max ~~2~~3 **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 The numeric value of ethyl alcohol level (000.~~00~~)

Additional information:

- Only completed when Alcohol Use Indicator (ED_15) is "yes".
- Medical blood alcohol concentration (BAC) is the amount of ingested alcohol absorbed into the body's cells and intercellular fluid; measured by a percentage based on 100 milligrams of alcohol per deciliter of blood (100 mg/dL).
- If drug use is suspected, but not confirmed by test, record null value "Not Known/Not Recorded".
- This data element refers to drug use by the patient and does not include medical treatment.

Data Source Hierarchy

1. Lab Results
2. ED Physician Notes

Uses

- Allows data to be sorted based upon alcohol indicators.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Alcohol Use Indicator

ED DISCHARGE DISPOSITION (ED_17)

Data Format [combo] single-choice ***California/National Minimum Element***

Definition: The disposition of the patient at the time of discharge from the ED.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *EdDischargeDisposition*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 Floor bed (general admission, non specialty unit bed)	7 Operating Room
2 Observation unit (unit that provides < 24 hour stays)	8 Intensive Care Unit (ICU)
3 Telemetry/step-down unit (less acuity than ICU)	9 Home without services
4 Home with services	10 Left against medical advice
5 Died	11Transferred to another hospital
6 Other (jail, institutional care, mental health, etc.)	

Additional Information

- Based upon UB-92 disposition coding.
- If reported as "Died" complete variable "ED Death." (ED_18)
- If the patient is directly admitted to the hospital, code as N/A.
- If ED Discharge Disposition is 4, 5, 6, 9, 10,11, then Hospital Discharge Date, Time, and Disposition should be N/A.

Data Source Hierarchy

1. Discharge Sheet
2. Nursing Progress Notes
3. Social Worker Notes

Uses

- Can be used to roughly characterize functional status at hospital discharge.

Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- ED Discharge Date and Time

ED DEATH (ED_18)

Data Format [combo] single-choice *California/National Minimum Element*

Definition: The type of death incurred while the patient was in the ED.

XSD Data Type *xs:integer*
XSD Element / Domain (Simple Type) *DeathInEd*
Multiple Entry Configuration No
Accepts Null Value Yes, common null values
Required in XSD Yes

Field Values

1 DOA: Declared dead on arrival with minimal or no resuscitation attempt (no invasive procedures attempted)	3 Died in ED (other than failed resuscitation attempt)
2 Death after failed resuscitation attempt (failure to respond within 15 minutes)	

Additional Information

- Only completed when ED Discharge Disposition is completed as "Died" (ED_17)
- Patients treated in accordance with a "Do Not Resuscitate" (DNR) order should be coded under "Died in ED (other than failed resuscitation attempt)". Patients with a DNR status should also be coded with a co-morbid condition (see DG_01)
- Dead on Arrival is defined as arrival at the hospital with no signs of life, but with pre-hospital CPR as indicated below:
  - Age >12 years
    Blunt trauma, more than 5 minutes pre-hospital CPR
    Penetrating head/neck/abdomen trauma, more than 5 minutes pre-hospital CPR
    Penetrating chest trauma, more than 15 minutes pre-hospital CPR
  - Age ≤ 12 years
    Blunt trauma, more than 15 minutes pre-hospital CPR
    Penetrating trauma, more than 15 minutes pre-hospital CPR

Data Source Hierarchy

1. Triage Form / Trauma Flow Sheet
2. Physician's Progress Notes
3. ED Nurses Notes

Uses

- Can be used to roughly characterize functional status at hospital discharge.

Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- ED Discharge Disposition
- ED Discharge Date
- ED Discharge Time

ED DISCHARGE DATE (ED_19)

ED_19

Data Format [date] ***California/National Minimum Element***

Definition: The date the patient was discharged from the ED.

XSD Data Type *xs:date*		**XSD Element / Domain (Simple Type)** *EdDischargeDate*	
Multiple Entry Configuration No		**Accepts Null Value** Yes, common null values	
Required in XSD Yes		**Minimum Constraint** 1,990	**Maximum Constraint** 2,030

Field Values

- Relevant value for data element.

Additional Information

- Collected as YYYY-MM-DD.
- ~~If the date is electronically stored within a database or transmitted via XML as a "tick", the referenced variables may also be used.~~
- Used to auto-generate an additional calculated field: Total ED Time: (elapsed time from ED admit to ED discharge).
- If the patient is directly admitted to the hospital, code as N/A

Data Source Hierarchy

1. Hospital Discharge Summary
2. Billing Sheet / Medical Records Coding Summary Sheet
3. Physician's Progress Notes

Uses

- Allows data to be assessed based upon total length of ED stay.

Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- ED Discharge Disposition
- ED Discharge Time

ED DISCHARGE TIME (ED_20)

ED_20

Data Format [time] ***California/National Minimum Element***

Definition: The time the patient was discharged from the ED.

XSD Data Type *xs:time*	**XSD Element / Domain (Simple Type)** *EdDischargeTime*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	

Field Values

- Relevant value for data element.

Additional Information

- Collected as HH:MM.
- HH:MM should be collected as military time.
- ~~If the time is electronically stored within a database or transmitted via XML as a "tick", the referenced variables may also be used.~~
- Used to auto-generate an additional calculated field: Total ED Time: (elapsed time from ED admit to ED discharge).
- If the patient is directly admitted to the hospital, code as N/A

Data Source Hierarchy

1. Hospital Record
2. Billing Sheet / Medical Records Coding Summary Sheet
3. Physician's Progress Notes

Uses

- Allows data to be sorted based upon total length of ED stay.

Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- ED Discharge Disposition
- ED Discharge Date

Hospital Procedure Information

HOSPITAL PROCEDURES (HP_01)

HP_01

Data Format [combo] multiple-choice ***California/National Minimum Element***

Definition: Operative or essential procedures conducted during hospital stay.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *HospitaProcedures*
Multiple Entry Configuration Yes, max 200 **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

- Major and minor procedure (ICD-9-CM) IP codes.
- The maximum number of procedures that may be reported for a patient is 200.

Additional Information

- Operative and/or essential procedures is defined as procedures performed in the Operating Room, Emergency Department, or Intensive Care Unit that were essential to the diagnoses, stabilization, or treatment of the patient's specific injuries.
- Repeated diagnostic procedures (e.g., repeated CT scan) should not be recorded (record only the first procedure).
- The operative time is the "cut time".

Data Source Hierarchy

1. Operative Reports
2. ER and ICU Records
3. Trauma Flow Sheet
4. Anesthesia Record
5. Billing Sheet / Medical Records Coding Summary Sheet
6. Hospital Discharge Summary

Uses

- Allows data to be used to characterize procedures used to treat specific injury types.

Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Procedure Date
- Procedure Time

HOSPITAL PROCEDURE START DATE (HP_02)

HP_02

Data Format [date] ***California/National Minimum Element***

Definition: The date operative and essential procedures were performed.

XSD Data Type *xs:date*		**XSD Element / Domain (Simple Type)** *ProcedureDate*	
Multiple Entry Configuration Yes		**Accepts Null Value** Yes, common null values	
Required in XSD Yes		**Minimum Constraint** 1,990	**Maximum Constraint** 2,030

Field Values

- Relevant value for data element.

Additional Information

- Collected as YYYY-MM-DD.
- ~~If the date is electronically stored within a database or transmitted via XML as a "tick," the referenced variables may also be used.~~

Data Source Hierarchy

1. OR Nurses Notes
2. Operative Reports
3. Anesthesia Record

Uses

- Allows data to be stratified by time until operative and essential procedures were performed.

Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Hospital Procedures
- Procedure Time

HOSPITAL PROCEDURE START TIME (HP_03)

HP_03

Data Format [time] ***California/National Minimum Element***

Definition The time operative and essential procedures were performed.

XSD Data Type *xs:time*	**XSD Element / Domain (Simple Type)** *ProcedureTime*
Multiple Entry Configuration Yes	**Accepts Null Value** Yes, common null values
Required in XSD Yes	

Field Values

- Relevant value for data element.

Additional Information

- Collected as HH:MM.
- HH:MM should be collected as military time.
- Procedure start time is defined as the time the incision was made (or the procedure started).
- ~~If the time is electronically stored within a database or transmitted via XML as a "tick," the referenced variables may also be used.~~

Data Source Hierarchy

1. OR Nurses Notes
2. Operative Reports
3. Anesthesia Record

Uses

- Allows data to be stratified by time until operative and essential procedures were performed.

Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Hospital Procedures
- Procedure Date

Injury Severity Information

AIS PREDOT CODE (IS_01)

IS_01

Data Format [combo] multiple choice

California Minimum/
Optional National Minimum Element

Definition: The Abbreviated Injury Scale (AIS) predot codes that reflect the patient's injuries.

XSD Data Type *xs:string* **XSD Element / Domain (Simple Type)** *AisPredot*
Multiple Entry Configuration Yes, max 50 **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

- The predot code is the 6 digits preceding the decimal point in an associated AIS code.

Additional Information

- This variable is a California minimum element; however, this variable is considered *optional* and is not required as part of the NTDS dataset

Uses

- Allows data to be used to characterize patients and hospital outcomes based upon the presence, severity and type of injury.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Common Null Values
- AIS Severity
- ISS Body Region
- AIS Version
- Locally Calculated ISS

AIS SEVERITY (IS_02)

IS_02

Data Format [combo] multiple choice

California Minimum/ Optional National Minimum Element

Definition: The Abbreviated Injury Scale (AIS) severity codes that reflect the patient's injuries.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *AisSeverity*
Multiple Entry Configuration Yes, max 50 **Accepts Null Value** Yes, common null values
Required in XSD Yes **Minimum Constraint** 1 **Maximum Constraint** 6

Field Values

1 Minor Injury	5 Critical Injury
2 Moderate Injury	6 Maximum Injury, Virtually Unsurvivable
3 Serious Injury	9 Not Possible to Assign
4 Severe Injury	

Additional Information

- This variable is a California minimum element; however, this variable is considered *optional* and is not required as part of the NTDS dataset
- The field value (9) "Not Possible to Assign" would be chosen if it is not possible to assign a severity to an injury.

Uses

- Allows data to be used to characterize patients and hospital outcomes based upon the presence, severity and type of injury.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Common Null Values
- AIS PREDOT
- ISS Body Region
- AIS Version
- Locally Calculated ISS

ISS BODY REGION (IS_03)

IS_03

Data Format [combo] multiple choice

California Minimum/
Optional National Minimum Element

Definition: The Injury Severity Score (ISS) body region codes that reflects the patient's injuries.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *IssRegion*
Multiple Entry Configuration Yes, max 50 **Accepts Null Value** Yes, common null values
Required in XSD Yes **Minimum Constraint** 1 **Maximum Constraint** 6

Field Values

1 Head or Neck	4 Abdominal or pelvic contents
2 Face	5 Extremities or pelvic girdle
3 Chest	6 External

- Head or neck injuries include injury to the brain or cervical spine, skull or cervical spine fractures.
- Facial injuries include those involving mouth, ears, nose and facial bones.
- Chest injuries include all lesions to internal organs. Chest injuries also include those to the diaphragm, rib cage, and thoracic spine.
- Abdominal or pelvic contents injuries include all lesions to internal organs. Lumbar spine lesions are included in the abdominal or pelvic region.
- Injuries to the extremities or to the pelvic or shoulder girdle include sprains, fractures, dislocations, and amputations, except for the spinal column, skull and rib cage.
- External injuries include lacerations, contusions, abrasions, and burns, independent of their location on the body surface.

Additional Information

- This variable is a California minimum element; however, this variable is considered *optional* and is not required as part of the NTDS dataset

Uses

- Allows data to be used to characterize patients and hospital outcomes based upon the presence, severity and type of injury.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Common Null Values
- AIS PREDOT
- AIS Severity
- AIS Version
- Locally Calculated ISS

AIS VERSION (IS_04)

Data Format [combo] single-choice

California Minimum/
Optional National Minimum Element

Definition: The software (and version) used to calculate Abbreviated Injury Scale (AIS) severity codes.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *AisVersion*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 80 Full code (description & severity, XXXXXX.Y)	9 AIS80 only (Severity only, .Y)
2 85 Full code (description & severity, XXXXXX.Y)	10 AIS85 only (Severity only, .Y)
3 90 Full code (description & severity, XXXXXX.Y)	11 AIS90 only (Severity only, .Y)
4 95 Full code (description & severity, XXXXXX.Y)	12 AIS95 only (Severity only, .Y)
5 98 Full code (description & severity, XXXXXX.Y)	13 AIS98 only (Severity only, .Y)
6 05 Full code (description & severity, XXXXXX.Y)	14 AIS05 only (Severity only, .Y)
7 ICD Map	15 Other
8 Tri-Code	

Additional Information

- This variable is a California minimum element; however, this variable is considered *optional* and is not required as part of the NTDS dataset

Uses

- Allows data to be used to characterize patients and hospital outcomes based upon the presence, severity and type of injury.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Common Null Values
- AIS PREDOT
- ISS Body Region
- AIS Severity
- Locally Calculated ISS

LOCALLY CALCULATED ISS (IS_05)

IS_05

Data Format [combo] single-choice

California Minimum/ Optional National Minimum Element

Definition: The Injury Severity Score (ISS) that reflects the patient's injuries.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *IssLocal*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes **Minimum Constraint** 1 **Maximum Constraint** 75

Field Values

- Relevant ISS value for the constellation of injuries.

Additional Information

- This variable is a California minimum element; however, this variable is considered *optional* and is not required as part of the NTDS dataset

Uses

- Allows data to be used to characterize patients and hospital outcomes based upon the presence, severity and type of injury.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Common Null Values
- AIS PREDOT
- ISS Body Region
- AIS Version
- AIS Severity

Diagnoses Information

~~AIS FULL CODE (CA_06))~~

~~Data Format~~ ~~[combo] single-choice~~ ***~~California Minimum Element~~***

CA_06

~~Definition:~~ ~~Anatomically based system that classifies individual injuries; maximum of 10 codes.~~

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *AbbreviatedInjurySeverityScore*
Multiple Entry Configuration Yes **Accepts Null Value** Yes, common null values
Required in XSD Yes

~~Field Values~~

- ~~Relevant value for the data element.~~

~~Data Collection~~

- ~~Hospital records~~

~~Other Associated Elements~~

- ~~Injury diagnosis DG_02~~

- —

~~AIS FULL CODE IDENTIFIER (CA_07))~~

CA_07

~~Data Format~~ ~~[combo] single-choice~~ ***~~California Minimum Element~~***

~~Definition:~~ ~~Version of AIS Code used with data element CA_06 "AIS Code".~~

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *AbbreviatedInjurySeverityScore*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes

~~Field Values~~

- ~~AIS 90~~
- ~~AIS 98~~
- ~~AIS 2005~~
- —

~~Data Collection~~

- ~~Hospital records~~

~~Other Associated Elements~~

- ~~Injury Diagnosis DG_02~~
- ~~AIS Full Code CA_06~~

CO-MORBID CONDITIONS (DG_01)

DG_01

Data Format [combo] multiple-choice ***California/National Minimum Element***

Definition: Pre-existing comorbid factors present before patient arrival at the ED/hospital.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *ComorbidConditions*
Multiple Entry Configuration Yes **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 No co-morbid condition present	13 Do Not Resuscitate (DNR) status
2 Alcoholism	14 Esophageal varices
3 Ascites within 30 days	15 Functionally dependent health status
4 Anticoagulation and bleeding disorder	16 History of angina within past 1 month
5 Burns	17 History of myocardial infarction within past 6 months
6 Chemotherapy for cancer within 30 days	18 History of severe COPD
7 Congestive heart failure	19 History of revascularization / amputation for PVD
8 Current smoker	20 Hypertension requiring medication
9 Currently requiring or on dialysis	21Impaired sensorium
10 CVA/residual neurological deficit	22 Obesity
11 Diabetes mellitus	23 Pregnancy > 20 weeks
12 Disseminated cancer	24 Steroid use

Uses

- Allows data to be used to characterize patients and hospital outcomes based upon the presence (and type) of co-morbid condition.
- The field value (1) “No NTDS co-morbidities are present” would be chosen if none of the pre-existing co-morbid factors listed above are present in the patient. This particular field value is available since individual state or hospital registries may track additional co-morbid factors not listed here.
- The value "N/A" should be used for patients with no known co-morbid conditions coded by your registry or defined in the NTDS Data Dictionary."

Data Source Hierarchy

1. History and Physical
2. Discharge Sheet
3. Billing Sheet

Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Injury Diagnosis DG_02

INJURY DIAGNOSES (DG_02)

DG_02

Data Format [combo] multiple-choice *California/National Minimum Element*

Definition: Diagnoses related to all identified injuries.

XSD Data Type *xs:integer*
XSD Element / Domain (Simple Type) *InjuryDiagnosis*
Multiple Entry Configuration Yes
Accepts Null Value Yes, common null values
Required in XSD Yes

Field Values

- Injury diagnoses as defined by (ICD-9-CM) codes (code range: 800-959.9).
- The maximum number of diagnoses that may be reported for an individual patient is 50.

Additional Information

- ICD-9-CM codes ~~should be listed starting with the most to least significant injury. The primary injury resulting in the hospitalization should be listed first. The "significance" of other injuries should be based upon severity and location~~ pertaining to other medical conditions (e.g., CVA, MI, co-morbidities, etc.) may also be included in this field.
- Used to auto-generate eight additional calculated fields: Abbreviated Injury Scale (six body regions), Injury Severity Score and the Functional Capacity Index.

Data Source Hierarchy

1. Hospital Discharge Summary
2. Billing Sheet / Medical Records Coding Summary Sheet
3. Trauma Flow Sheet
4. ER and ICU Records

Uses

- Allows data to be used to characterize patients and hospital outcomes based upon the presence, severity and type of injury.

Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Co-morbid Conditions DG_01

Outcome Information

TOTAL ICU LENGTH OF STAY (O_01)

O_01

Data Format [number] ***California/National Minimum Element***

Definition: The total number of patient days in any ICU (including all episodes).

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *TotalICuLos*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 0 **Maximum Constraint** 4~~5~~00

Field Values

- Relevant value for data element.

Additional Information

- Recorded in full day increments with any partial day listed as a full day.
- Field allows for multiple admission and discharge dates and autofills with total ICU LOS. If a patient is admitted and discharged on the same date, the LOS is one day.

Data Source Hierarchy

1. ICU Nursing Flow Sheet
2. Calculate Based on Admission Form and Discharge Sheet
3. Nursing Progress Notes

Uses

- Provides a rough estimate of severity of injury and resource utilization.

Data Collection

- Hospital records or electronically through linkage with EMS/medical record.

TOTAL VENTILATOR DAYS (O_02)

O_02

Data Format [number] ***California/National Minimum Element***

Definition: The total number of patient days spent on a mechanical ventilator (including all episodes).

XSD Data Type *xs:integer*	**XSD Element / Domain (Simple Type)** *TotalVentDays*
Multiple Entry Configuration No	**Accepts Null Value** Yes, common null values
Required in XSD Yes	**Minimum Constraint** 0 **Maximum Constraint** 4100

Field Values

- Relevant value for data element.

Additional Information

- Recorded in full day increments with any partial day listed as a full day.
- Field allows for multiple start and stop dates and autofills with total days spent on a mechanical ventilator. If a patient begins and ends mechanical ventilation on the same date, the total ventilator days is one day.
- Excludes mechanical ventilation time associated with OR procedures.

Data Source Hierarchy

1. ICU Respiratory Therapy Flowsheet
2. ICU Nursing Flow Sheet
3. Physician's Daily Progress Notes
4. Calculate Based on Admission Form and Discharge Sheet

Uses

- Provides a rough estimate of severity of injury and resource utilization.

Data Collection

- Hospital records or electronically through linkage with EMS/medical record.

HOSPITAL DISCHARGE DATE (O_03)

O_03

Data Format [date/time] ***California/National Minimum Element***

Definition: The date the patient was discharged from the hospital.

XSD Data Type *xs:date*		**XSD Element / Domain (Simple Type)** *HospitalDischargeDate*	
Multiple Entry Configuration No		**Accepts Null Value** Yes, common null values	
Required in XSD Yes		**Minimum Constraint** 1,990	**Maximum Constraint** 2,030

Field Values

- Relevant value for data element.

Additional Information

- Collected as YYYY-MM-DD.
- If the date is electronically stored within a database or transmitted via XML as a "tick", the referenced variables may also be used.
- Used to auto-generate an additional calculated field: Total Length of Hospital Stay (elapsed time from ED/hospital arrival to hospital discharge).

Data Source Hierarchy

1. Hospital Record
2. Billing Sheet / Medical Records Coding Summary Sheet
3. Physician Discharge Summary

Uses

- Provides a rough estimate of severity of injury and resource utilization.

Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- ED/Hospital Admission Date
- ED/Hospital Admission Time
- Hospital Discharge Time

HOSPITAL DISCHARGE TIME (O_04)

O_04

Data Format [time] ***California/National Minimum Element***

Definition: The time the patient was discharged from the hospital.

XSD Data Type *xs:time*		**XSD Element / Domain (Simple Type)** *HospitalDischargeTime*	
Multiple Entry Configuration No		**Accepts Null Value** Yes, common null values	
Required in XSD Yes		**Minimum Constraint** 1,990	**Maximum Constraint** 2,030

Field Values

- Relevant value for data element.

Additional Information

- Collected as HH:MM.
- HH:MM should be collected as military time.
- ~~If the time is electronically stored within a database or transmitted via XML as a "tick", the referenced variables may also be used.~~
- Used to auto-generate an additional calculated field: Total Length of Hospital Stay (elapsed time from ED/hospital arrival to hospital discharge).

Data Source Hierarchy

1. Hospital Record
2. Billing Sheet / Medical Records Coding Summary Sheet
3. Physician Discharge Summary

Uses

- Provides a rough estimate of severity of injury and resource utilization.

Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- ED/Hospital Admission Date and Time
- Hospital Discharge Date

HOSPITAL DISCHARGE DISPOSITION (O_05)

Data Format [combo] single-choice ***California/National Minimum Element***

O_05

Definition: The disposition of the patient when discharged from the hospital.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *HospitalDischargeDisposition*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 Discharged/Transferred to another acute care hospital using EMS	6 Discharged home with no home services
2 Discharged/Transferred to an Intermediate Care Facility	7 Discharged/Transferred to Skilled Nursing Facility
3 Discharge/Transferred to home under care of Home Health Agency	8 Discharged/ Transferred to hospice care
4 Left against medical advice	9 Discharged/Transferred to another type of rehabilitation or long-term care facility
5 Expired	

Additional Information

- ~~Based upon UB-92 disposition coding.~~
- Field value = 6, "home" refers to the patient's current place of residence (e.g., prison, etc)
- Field values based upon UB-04 disposition coding.
- Disposition to any other non-medical facility should be coded as 6.
- Disposition to any other medical facility should be coded as 9.
- Refer to the glossary for definitions of facility types.

Data Source Hierarchy

1. Hospital Discharge Summary Sheet
2. Nurses Notes
3. Case Manager / Social Services Notes

Uses

- Can be used to roughly characterize functional status at hospital discharge.

Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- ED Discharge Date
- ED Discharge Time

TRANSFER IN FOR HIGHER LEVEL OF TRAUMA CARE (CA_03)

Data Format [combo] single-choice ***California Minimum Element***

Definition

The interfacility transfer of a trauma patient from non-trauma center or other trauma center for higher level (greater level of trauma resources) of trauma care.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *HospitalDischargeDisposition*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 Yes

2 No

Additional Information

Uses

Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

TRANSFER OUT FOR HIGHER LEVEL OF TRAUMA CARE (CA_04)

Data Format [combo] single-choice ***California Minimum Element***

Definition

The interfacility transfer of a trauma patient from a trauma center to other trauma center for higher level (greater level of trauma resources) of trauma care.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *HospitalDischargeDisposition*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 Yes

2 No

3 Unknown/Not documented

Data Collection

- Transfer in for Higher Level of Trauma Care (Hospital Receiving) CA_03

Other Associated Elements

- ED Discharge ED_17

Financial Information

BILLED HOSPITAL CHARGES (CA_05)

Data Format [combo] single-choice *California Minimum Element*

CA_05

Definition: The final billed amount charged for this admission, aggregate amount expressed in whole dollar figures.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *HospitalDischargeDisposition*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

- Any integer between 0 and 999999999

Data Source Hierarchy

- Billing Sheet
- ED Charge Sheet

Data Collection

- Hospital record or electronically through linkage with hospital billing system.

Other Associated Elements

- Primary Method of Payment-F_01

PRIMARY METHOD OF PAYMENT (F_01)

F_01

Data Format [combo] single-choice ***California/National Minimum Element***

Definition: Primary source of payment for hospital care.

XSD Data Type *xs:string* **XSD Element / Domain (Simple Type)** *PrimaryMethodPayment*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes **Minimum Constraint** 2 **Maximum Constraint** 3

Field Values

1 Medicaid/MediCal	10 Other ~~10. Other government insurance~~
2 Not Billed (for any reason)	11. No charge/ Charity
3 Self Pay	12. Managed care organization
4 Private commercial insurance	13. Organ Donor Subsidy
5 No Fault Automobile ~~5. Other insurance~~	14. Military insurance
6 Medicare ~~6. Organ Donor Subsidy~~	15 Kaiser
7 Other Government ~~7. Medicare~~	16 County or State government
8 Workers Compensation ~~8. Military insurance~~	17 State Prison
9 Blue Cross/Blue Shield ~~9. Worker's Compensation~~	18 Federal Prison

Additional Information

- Field value 11 maps to field value 2.
- Field value 12 and 15 map to field value 10.
- Field value 14 maps to field value 7.
- Field values 16, 17, and 18 map to field value 7

Data Source Hierarchy

1. Billing Sheet / Medical Records Coding Summary Sheet
2. Hospital Admission Form

Uses

- Allows data to be sorted based upon payer mix.

Data Collection

- EMS or hospital records or electronically through linkage with the EMS/medical record.

Quality Assurance Information

Q_01

HOSPITAL COMPLICATIONS (Q_01)

Data Format [combo] multiple-choice ***California/National Minimum Element***

Definition: Any medical complication that occurred during the patient's stay at your hospital.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *HospitalComplications*
Multiple Entry Configuration Yes **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 No NTDS listed medical complication occurred	14 Deep Vein Thrombosis (DVT) / thrombophlebitis
2 Abdominal compartment syndrome	15 Extremity compartment syndrome
3 Abdominal fascia left open	16 Graft/prosthesis/flap failure
4 Acute renal failure	17 Intracranial pressure
5 Acute respiratory distress syndrome (ARDS)	18 Myocardial infarction
6 Base deficit	19 Organ/space surgical site infection
7 Bleeding	20 Pneumonia
8 Cardiac arrest with CPR	21 Pulmonary embolism
9 Coagulopathy	22 Stroke / CVA
10 Coma	23 Superficial surgical site infection
11 Decubitus ulcer	24 Systemic sepsis
12 Deep surgical site infection	25 Unplanned intubation
13 Drug or alcohol withdrawal syndrome	26 Wound disruption

Additional Information

- The field value (1) "No NTDS listed medical complications occurred" would be chosen if none of the hospital complications listed above are present in the patient. This particular field value is available since individual state or hospital registries may track additional hospital complications not listed here.
- The value "N/A" should be used for patients with no known co-morbid conditions coded by your registry or defined in the NTDS Data Dictionary."

Data Source Hierarchy

1. Discharge Sheet
2. History and Physical
3. Billing Sheet

Uses

- Allows data to be used to characterize patients and hospital outcomes based upon the presence (and type) of hospital complication.

Data Collection

- Hospital records or electronically through linkage with the EMS/medical record.

Other Associated Elements

- Injury Diagnosis

Appendix 1: Auto Calculated Variables Based upon Existing Data Elements

FIPS code (location code)

Definition: Federal information processing standards codes (FIPS codes) are a standardized set of numeric codes issued by the National Institute of Standards and Technology (NIST) to ensure uniform identification of geographic entities. The entities covered include: states, counties, cities and other statistically equivalent entities.

Calculation: An overall FIPS code is calculated by concatenating individual FIPS codes for state (2-digit FIPS code), county (2-digit FIPS code) and city (5-digit FIPS code) in that order.

Trauma Type (blunt, penetrating, burn)

Definition: An indication of the type (or nature) of trauma produced by an injury.

Calculation: Trauma type is derived based upon the mechanism of injury description grouping for the primary E-code for each incident. The following table was used:

Mechanism Code	Mechanism Description	Trauma Type Code	Trauma Type Description
1	Cut/pierce	2	Penetrating
2	Drowning/submersion	4	Other/unspecified
3	Fall	1	Blunt
4	Fire/flame	3	Burn
5	Hot object/substance	3	Burn
6	Firearm	2	Penetrating
7	Machinery	1	Blunt
8	MVT Occupant	1	Blunt
9	MVT Motorcyclist	1	Blunt
10	MVT Pedal cyclist	1	Blunt
11	MVT Pedestrian	1	Blunt
12	MVT Unspecified	1	Blunt
13	MVT Other	1	Blunt
14	Pedal cyclist, other	1	Blunt
15	Pedestrian, other	1	Blunt
16	Transport, other	1	Blunt
17	Bites and stings	4	Other/unspecified
18	Other natural/env	4	Other/unspecified
19	Overexertion	4	Other/unspecified
20	Poisoning	4	Other/unspecified
21	Struck by, against	1	Blunt
22	Suffocation	4	Other/unspecified
23	Other specified and classifiable	4	Other/unspecified
24	Other specified, not elsewhere classifiable	4	Other/unspecified
25	Unspecified	4	Other/unspecified
26	Adverse effects, medical care	4	Other/unspecified
27	Adverse effects, drugs	4	Other/unspecified

The mechanism of injury description grouping is classified according to Table 2, Center for Disease Control and Prevention (CDC) matrix of e-code groupings: "Recommended framework of E-code groupings for presenting injury mortality and morbidity data (February 1, 2007)".

~~*Calculation:* Injury diagnoses are categorized according to the Barell Matrix[1] a two-dimensional array of ICD-9-CM codes grouped by body region and nature of injury. The Barell Matrix and the ICD-9-CM codes defining each cell are presented in Table 1 in this Appendix. An electronic version of the Barell Matrix may be viewed at: www.cdc.gov/nchs/about/otheract/ice/barellmatrix.htm~~

Injury Intentionality (using CDC matrix)

Definition: An indication of whether an injury was caused by an act carried out on purpose by oneself or by another person(s), with the goal of injuring or killing.

Calculation: The injury intentionality was classified according to Table 2. Center for Disease Control and Prevention (CDC) matrix of E-code groupings: "Recommended framework of E-code groupings for presenting injury mortality and morbidity data (February 1, 2007)".

~~*Calculation:* A matrix table grouping External Cause of Injury Codes (E-Codes) into two classifications: *mechanism* of injury or cause of death (e.g., falls, etc.) by *intent* of injury or manner of death (i.e., unintentional or "accidental," etc. [see Table 2]). An electronic version of the CDC matrix may be viewed at: www.cdc.gov/ncipc/whatsnew/matrix2.htm~~

Total EMS Response Time

Definition: The total elapsed time from dispatch of the EMS transporting unit to scene arrival of the EMS transporting unit (i.e., the time the vehicle stopped moving).

Calculation: EMS Unit Arrival on Scene DateTime – EMS Dispatch DateTime. This calculation is provided in minutes.

Total EMS Scene Time

Definition: The total elapsed time from EMS transporting unit scene arrival to EMS transporting unit scene departure (i.e., the time the vehicle started moving).

Calculation: EMS Unit Scene Departure DateTime – EMS Unit Arrival on Scene DateTime. This calculation is provided in minutes.

Total EMS Time

Definition: The total elapsed time from dispatch of the EMS transporting unit to hospital arrival of the EMS transporting unit.

Calculation: ED/Hospital Arrival DateTime – EMS Dispatch DateTime. This calculation is provided in both days and minutes, where any total EMS times less than 24 hours were rounded up to 1 day.

Overall GCS - EMS score (adult and pediatric)

Definition: A scale calculated in the out-of-hospital setting which evaluates the patient's initial level of awareness, which indirectly indicates the extent of neurologic injury. The scale rates three categories of patient responses; eye opening, best verbal response, and best motor response. The lowest score is 3 and is indicative of no response, the highest score is 15, indicates the patient is alert and aware of his or her surroundings.

Calculation: Initial Field GCS Eye + Initial Field GCS Verbal + Initial Field GCS Motor

Overall GCS - ED score (adult and pediatric)

Definition: A scale calculated in the emergency department (ED) or hospital setting which evaluates the patient's initial (upon arrival) level of awareness, which indirectly indicates the extent of neurologic injury. The scale rates three categories of patient responses; eye opening, best verbal response, and best motor response. The lowest score is 3 and is indicative of no response, the highest score is 15, indicates the patient is alert and aware of his or her surroundings.

Calculation: Initial ED/Hospital GCS Eye + Initial ED/Hospital GCS Verbal + Initial ED/Hospital GCS Motor

Revised Trauma Score - EMS (adult and pediatric)

Definition: The Revised Trauma Score is a physiological scoring system used to predict death from injury or need for trauma center care. It is scored based upon the initial vital signs obtained from the patient in the out-of-hospital setting.

Calculation: ~~RTS = 0.9368 (Initial Field GCS Total) + 0.7326 (Initial Field Systolic Blood Pressure) + 0.2908 (Initial Field Respiratory Rate)~~ First, Initial Field GCS – Total (GCS), Initial Field Systolic Blood Pressure (SBP), and Initial Field Respiratory Rate (RR) are assigned a coded value based on their range per the table below. Second, RTS is calculated as follows:

RTS = 0.9368 (Initial Field GCS Total coded value) + 0.7326 (Initial Field Systolic Blood Pressure coded value) + 0.2908 (Initial Field Respiratory Rate coded value)

GCS	SBP	RR	Coded Value
13-15	>89	10-29	4
9-12	76-89	>29	3
6-8	50-75	6-9	2
4-5	1-49	1-5	1
3	0	0	0

Revised Trauma Score - ED (adult and pediatric)

Definition: The Revised Trauma Score is a physiological scoring system used to predict death from injury or need for trauma center care. It is scored based upon the initial vital signs obtained from the patient in the ED or hospital setting.

~~*Calculation:* RTS = 0.9368 (Initial ED/Hospital GCS Total) + 0.7326 (Initial ED/Hospital Systolic Blood Pressure) + 0.2908 (Initial ED/Hospital Respiratory Rate)~~

Calculation First, Initial Ed/Hospital GCS – Total (GCS), Initial Ed/Hospital Systolic Blood Pressure (SBP), and Initial Ed/Hospital Respiratory Rate (RR) are assigned a coded value based on their range per the table below. Second, RTS is calculated as follows:

RTS = 0.9368 (Initial Ed/Hospital GCS Total coded value) + 0.7326 (Initial Ed/Hospital Systolic Blood Pressure coded value) + 0.2908 (Initial Ed/Hospital Respiratory Rate coded value)

GCS	SBP	RR	Coded Value
13-15	>89	10-29	4
9-12	76-89	>29	3
6-8	50-75	6-9	2
4-5	1-49	1-5	1
3	0	0	0

Abbreviated Injury Scale (six body regions)

Definition: The Abbreviated Injury Scale (AIS) is an anatomical scoring system first introduced in 1969. Since this time it has been revised and updated against survival to provide a ranking the severity of injury. AIS scores are available for six body regions; Head (or neck), Face, Chest, Abdominal, Extremities (including pelvis) and External. The AIS is monitored by a scaling committee of the Association for the Advancement of Automotive Medicine.

Calculation: ~~Injuries are ranked on a scale of 1 to 6, with 1 being minor, 5 severe and 6 an un-survivable injury. This represents the 'threat to life' associated with an injury and is not meant to represent a comprehensive measure of severity. The AIS is not a true scale, in that the difference between any two AIS scores is not the same as the difference between another set of two scores.~~ The components of the AIS scores are translated from ICD-9 CM diagnosis codes using ICD/AIS map, ICDMAP90, 1995 update [computer program: ICODERI.DLL], Windows version. Johns Hopkins University, 1997. The AIS diagnosis code, severity and body region is calculated for each injury. The AIS severity is ranked on a scale of 1 to 6, with 1 being minor, 5 severe and 6 an un-survivable injury. An AIS score of 6 represents the 'threat to life' associated with an injury and is not meant to represent a comprehensive measure of severity.

ICD-9 CM Body Regions and Nature of Injury

Definition: The classification of Body regions and Nature of Injury for the associated ICD-9 CM injury diagnosis.

Calculation: The Body regions and Nature of injury was classified according to Table 1. The Barell Injury Diagnosis Matrix.

Injury Severity Score

~~*Definition:* The Injury Severity Score (ISS) is an anatomical scoring system that provides an overall score for patients with multiple injuries.~~

~~*Calculation:* Each injury (DG_02) is assigned an Abbreviated Injury Scale (AIS) score and is allocated to one of six body regions (Head, Face, Chest, Abdomen, Extremities (including Pelvis) and External). The 3 most severely injured body regions have their AIS score squared and added together to produce the ISS score. Only the highest AIS score in each body region is used. The ISS score takes values from 0 to 75. If an injury is assigned an AIS of 6 (un-survivable injury), the ISS score is automatically assigned to 75.~~

Definition: The Injury Severity Score (ISS) is an anatomical scoring system that provides an overall score for patients with multiple injuries. Injury Severity Scores range from 1 to 75. If an injury is assigned an AIS severity of 6 (currently untreatable injury), the ISS score is automatically assigned 75.

Calculation: There are two ISS scores calculated in the data base: One ISS score that is derived from the AIS scores submitted by the hospitals and one ISS score that is derived from the AIS score that is calculated from the ICD/AIS map, ICDMAP90, 1995 update [computer program: ICODERI.DLL], Windows version. Johns Hopkins University, 1997. Each injury is allocated to one of six body regions based on the Abbreviated Injury Scale (AIS) score according to:

- Head or neck
- Face
- Chest
- Abdominal or pelvic contents
- Extremities or pelvic girdle
- External

The 3 most severely injured body regions have their AIS severity score squared and added together to produce the ISS score. Only the highest AIS score in each body region is used.

Functional Capacity Index

~~*Definition:* The Functional Capacity Index (FCI) maps AIS injury descriptions into scores that reflect expected levels of reduced functional capacity at 1 year after injury. The FCI predicts functional capacity across 10 dimensions of physical function. It is meant to predict the ability of the injured to perform tasks important for everyday living independent of physical and social environment.~~

~~*Calculation: S*pecific scores for functional capacity dimensions are assigned (by expert consensus) to each AIS injury description (the "pre-dots") as is one overall score that summarizes function across the 10 dimensions. The overall FCI score ranges from 0 (representing death) to 1 (representing no limitations).~~

Definition: The Functional Capacity Index (FCI) maps AIS injury descriptions into scores that reflect expected levels of reduced functional capacity at 1 year after injury. The FCI

predicts functional capacity across 10 dimensions of physical function. It is meant to predict the ability of the injured to perform tasks important for everyday living independent of physical and social environment. The overall FCI score ranges from 0 (representing death) to 100 (representing no limitations), indicating the percent of functionality.

Calculation: There are two types of calculated FCI scores in the data base: One which is derived from the AIS scores submitted by the hospitals and one which is derived from the calculated AIS score. Each AIS injury diagnosis code is assigned (by expert consensus) a FCI score for each one of the10 dimensions as well as an overall FCI score. That is, there will be an FCI score for each of the 10 dimensions and for the total injury for each trauma injury diagnosis. In addition, the overall FCI score for each incident is then defined as the lowest FCI score among all the injury diagnoses for that incident.

Use: FCI scores are included the final research NTDB database as a potential measure of function following recovery from severe injury. The FCI continues to undergo refinement and is available to researchers, in part, to facilitate further testing of the validity and reliability of the index. We anticipate FCI scores available in the research database beginning in 2009.

Total ED Time

Definition: The total elapsed time the patient was in the emergency department (ED).

Calculation: ED Discharge DateTime – ED/Hospital Arrival DateTime. This calculation is provided in both days and minutes, where any total ED time less than 24 hours were rounded up to 1 day.

Total Length of Hospital Stay

Definition: The total elapsed time the patient was in the hospital.

Calculation: Hospital Discharge DateTime – ED/Hospital Arrival DateTime. This calculation is provided in both days and minutes where any total length of hospital stay less than 24 hours were rounded up to 1 day.

Table 1:

The Barell Injury Diagnosis Matrix, Classification by Body Region and Nature of the Injury

Table 1: The Barell Injury Diagnosis Matrix, Classification by Body Region and Nature of the Injury

				ICD-9-CM codes	A FRACTURE 800-829	B DISLOCATION 830-839	C SPRAINS &STRAINS 840-848	D INTERNAL 850-854, 860-869, 952, 995.55	E OPEN WOUND 870-884, 890-894	F AMPUTATIONS 885-887, 895-897	G BLOOD VESSELS 900-904	H CONTUSION / SUPERFICIAL 910-924	I CRUSH 925-929	J BURNS 940-949	K NERVES 950-951, 953-957	L UNSPECIFIED 959
Head and Neck	Traumatic Brain Injury	1	Type 1 TBI	800,801,803,804(.1-.4,.6-.9), (.03-.05,.53-.55) 850(.2-.4), 851-854, 950(.1-.3), 995.55	800,801,803,804(.1-.4,.6-.9) 800, 801, 803, 804 (.03-.05,.53-.55)	/	/	850(.2-.4) 851-854*, 995.55	/	/	/	/	/	/	950.1-.3	/
		2	Type 2 TBI	800,801,803,804(.00,.02,.06,.09) (.50,.52,.56,.59) , 850(.0,.1,.5,.9)	800,801,803,804(.00,.02,.06,.09), 800,801,803,804(.50,.52,.56,.59)			850(.0,.1,.5,.9)								
		3	Type 3 TBI	800,801,803,804(.01, .51)	800,801,803,804(.01,.51)	/	/	/	/	/	/	/	/	/	/	/
	Other head, face and neck	4	Other Head	873(.0-.1,.8-.9), 941.x6, 951, 959.01	/	/	/	/	873.0-.1,.8-.9	/	/	/	/	941.x6	951	959.01*
		5	Face	802, 830, 848.0-.1, 872, 873.2-.7, 941(.x1,.x3-.x5,.x7)	802	830	848.0-.1	/	872, 873.2-.7	/	/	/	/	941.x1,.x3-.x5,.x7	/	/
		6	Eye	870-871, 918, 921, 940, 941.x2, 950(.0,.9)	/	/	/	/	870-871	/	/	918, 921	/	940, 941.x2	950(.0,.9)	/
		7	Neck	807.5-.6, 848.2, 874, 925.2, 941.x8, 953.0, 954.0	807.5-.6	/	848.2	/	874	/	/	/	925.2	941.x8	953.0, 954.0	/
		8	Head, Face and Neck Unspecified	900, 910, 920, 925.1, 941.x0, .x9, 947.0, 957.0, 959.09	/	/	/	/	/	/	900	910, 920	925.1	941.x0,.x9, 947.0	957	959.09
spine and back	Spinal Cord (SCI)	9	Cervical SCI	806(.0-.1), 952.0	806.0-.1	/	/	952	/	/	/	/	/	/	/	/
		10	Thoracic/ Dorsal SCI	806(.2-.3), 952.1	806.2-.3	/	/	952.1	/	/	/	/	/	/	/	/
		11	Lumbar SCI	806(.4-.5), 952.2	806.4-.5	/	/	952.2	/	/	/	/	/	/	/	/
		12	Sacrum Coccyx SCI	806(.6-.7), 952(.3-.4)	806.6-.7	/	/	952.3-.4	/	/	/	/	/	/	/	/
		13	Spine+ Back unspecified SCI	806(.8-.9), 952(.8-.9)	806.8-.9	/	/	952.8-.9	/	/	/	/	/	/	/	/
	Vertebral Column (VCI)	14	Cervical VCI	805(.0-.1), 839(.0-.1), 847.0	805.0-.1	839.0-.1	847.0	/	/	/	/	/	/	/	/	/
		15	Thoracic /Dorsal VCI	805(.2-.3), 839(.21,.31), 847.1	805.2-.3	839.21,.31	847.1	/	/	/	/	/	/	/	/	/
		16	Lumbar VCI	805(.4-.5), 839(.20,.30), 847.2	805.4-.5	839.20,.30	847.2	/	/	/	/	/	/	/	/	/
		17	Sacrum Coccyx VCI	805(.6-.7), 839(.41-.42), 839(.51-.52), 847.3-.4	805.6-.7	839(.41-.42, .51-.52)	847.3-.4	/	/	/	/	/	/	/	/	/
		18	Spine+ Back unspecified VCI	805(.8-.9), 839(.40,.49), 839(.50,.59)	805.8-.9	839(.40,.49,.50,.59)	/	/	/	/	/	/	/	/	/	/
Torso	Torso	19	Chest (Thorax)	807.0-.4), 839(.61,.71), 848(.3-.4), 860-862, 875, 879(.0-.1), 901, 922(.0-.01,.33), 926.19, 942x1-x2 953.1	807.0-.4	839.61,.71	848.3-.4	860-862	875, 879.0-.1	/	901	922(.0,.1,.33)	926.19	942.x1-x2	953.1	/
		20	Abdomen	863-866, 868, 879(.2-.5), 902(.0-.4), 922.2,942.x3, 947.3, 953(.2,.5)	/	/	/	863-866, 868	879.2-.5	/	902.0-.4	922.2	/	942.x3, 947.3	953.2, 953.5	/
		21	Pelvis & Urogenital	808, 839(.69,.79), 846, 848.5, 867,877-878 902(.5,.81-.82), 922.4, 926(.0,.12), 942.x5,947.4, 953.3	808	839.69,.79	846, 848.5	867	877-878	/	902(.5, .81-.82)	922.4	926(.0, .12)	942.x5, 947.4	953.3	/
		22	Trunk	809, 879(.6-.7), 911, 922(.8-.9), 926(.8-.9), 942(x.0,x9), 954(.1..8-.9), 959.1	809	/	/	/	879.6-.7	/	/	911, 922.8-.9	926.8-.9	942.x0, 942.x9	954.1, .8-.9	959.1
		23	Back and Buttock	847.9, 876, 922(.31-.32), 926.11, 942.x4	/	/	847.9	/	876	/	/	922.31-.32	926.11	942.x4	/	/
Extremities	Upper	24	Shoulder & upper arm	810-812, 831, 840, 880, 887(.2-.3), 912,923.0, 927.0, 943(.x3-.x6) ,959.2	810-812	831	840	/	880	887.2-.3	/	912, 923.0	927.0	943.x3-.x6	/	959.2
		25	Forearm & elbow	813, 832, 841, 881(.x0-.x1), 887(.0-.1), 923.1, 927.1, 943(.x1-.x2)	813	832	841	/	881.x0-x1	887.0-.1	/	923.1	927.1	943.x1-x2	/	/
		26	Wrist, hand & fingers	814-817, 833-834, 842,881.x2, 882, 883, 885-886, 914-915, 923(.2-.3), 927(.2-.3), 944, 959(.4-.5)	814-817	833, 834	842 /	/	881.x2,882, 883	885-886	/ /	914-915, 923.2-.3	927.2-.3	944 /	/ /	959.4-.5
		27	Oher & unspecified	818, 884, 887(.4-.7), 903, 913, 923(.8-.9), 927(.8-.9), 943(.x0, .x9), 953.4, 955, 959.3	818	/	/	/	884	887.4-.7	903	913,923.8..9	927.8-.9	943.x0,.x9	953.4, 955	959.3
	Lower	28	Hip	820, 835, 843, 924.01, 928.01	820	835	843	/	/	/	/	924.01	928.01	/	/	/
		29	Upper leg & thigh	821, 897(.2-.3), 924.00, 928.00, 945.x6	821			/	/	897.2-.3	/	924.00	928.00	945.x6	/	/
		30	Knee	822, 836, 844.0-.3, 924.11, 928.11, 945.x5	822	836	844.0-.3	/	/	/	/	924.11	928.11	945.x5	/	/
		31	Lower leg & ankle	823-824, 837, 845.0, 897(.0-.1), 924(.10,.21), 928(.10,.21), 945(.x3-.x4)	823-824	837	845.0	/		897.0-.1	/	924.10,.21	928.10,.21	945.x3-.x4	/	/
		32	Foot & toes	825-826, 838, 845.1, 892-893, 895-896, 917, 924(.3,.20), 928 (.3,.20), 945 (.x1-.x2)	825-826	838	845.1	/	892-893	895-896	/	917, 924.3,.20	928.3,.20	945.x1-.x2	/	/
		33	Other & unspecified	827,844(.8-.9), 890-891, 894, 897(.4-.7), 904(.0-.8), 916, 924(.4-.5), 928(.8-.9), 945(x0,.x9), 959.6-.7	827	/	844.8..9	/	890-891,894	897.4-.7	904.0-.8	916, 924.4-.5	928.8,.9	945.x0-.x9	/	959.6-.7
Unclassifiable by site	Other & unspecified	34	Other/ multiple	819, 828, 902(.87,.89), 947(.1-.2), 953.8, 956	819, 828	/	/	/	/	/	902.87,.89	/	/	947.1-.2	953.8, 956	/
		35	Unspecified site	829, 839(.8-.9), 848(.8-.9), 869, 879(.8,.9), 902.9, 904.9, 919, 924(.8,.9), 929, 946, 947(.8,.9), 948, 949, 953.9, 957(.1,.8,.9), 959(.8,.9)	829	839.8-.9	848.8-.9	869	879(.8-.9)	/	902.9, 904.9	919, 924.8,.9	929	946, 947.8,.9 948, 949	953.9, 957.1,.8,.9	959.8,.9
	System wide	36	System-wide & late effects	905-908, 909 (.0,.1,.2,.4,.9), 930-939, 958, 960-994, 995.50-.54,.59, 995(.80-.85)	Foreign body (930-939), Early complications of trauma (958), Poisoning (960-979), Toxic Effects (980-989), Other and unspecified effects of external cause (990-994) Child and adult maltreatment (995.50-.54,.59, 995.80-.85) Late effects of injuries, poisonings, toxic effects and other external causes (905-909) excluding 909(.3, .5)											

Special diagnostic codes for trauma: Flail Chest (807.4) Pneumothorax (860)

For purposes of classification, head injuries are labeled as **Type 1 TBI** if there is recorded evidence of an intracranial injury or a moderate or a prolonged loss of consciousness (LOC), Shaken Infant Syndrome (SIS), or injuries to the optic nerve pathways. **Type 2 TBI** includes injuries with no evidence of intracranial injury, and LOC of less than one hour, or LOC of unknown duration, or unspecified level of consciousness. **Type 3 TBI** includes patients with no evidence of intracranial injury and no LOC.

***Note from** CDC: 959.01 (added to ICD-9-CM in 1997) is not intended to be assigned to TBI cases; however, in the USA it has been assigned incorrectly to a substantial proportion of cases previously coded 854.

Table 2:

Injury Intentionality CDC Matrix

Table 2: Injury Intentionality CDC Matrix

Mechanism/Cause	Manner/Intent				
	Unintentional	**Self-inflicted**	**Assault**	**Undetermined**	**Other**
Cut/pierce	E920.0-.9	E956	E966	E986	E974
Drowning/submersion	E830.0-.9, E832.0-.9, E910.0-.9	E954	E964	E984	
Fall	E880.0-E886.9, E888	E957.0-.9	E968.1	E987.0-.9	
Fire/burn[3]	E890.0-E899, E924.0-.9	E958.1,.2,.7	E961, E968.0,.3, **E979.3**	E988.1,.2,.7	
Fire/flame[3]	E890.0-E899	E958.1	E968.0, **E979.3**	E988.1	
Hot object/substance	E924.0-.9	E958.2,.7	E961,E968.3	E988.2,37	
Firearm[3]	E922.0-.3,.8,.9	E955.0-.4	E965.0-4, **E979.4**	E985.0-.4	E970
Machinery	E919 (.0-.9)				
Motor vehicle traffic[2,3]	E810-E819 (.0-.9)	E958.5	**E968.5**	E988.5	
Occupant	E810.-E819 (.0,.1)				
Motorcyclist	E810-E819 (.2,.3)				
Pedal cyclist	E810-E819 (.6)				
Pedestrian	E810-E819 (.7)				
Unspecified	E810-E819 (.9)				
Pedal cyclist, other	E800-E807 (.3) E820-E825 (.6), E826.1,.9 E827-E829(.1)				
Pedestrian, other	E800-E807(.2) E820-E825(.7) E826-E829(.0)				

[1]Includes legal intervention (E970-E978) and operations of war (E990-E999).
[2]Three 4th-digit codes (.4 [occupant of streetcar], .5 [rider of animal], .8 [other specified person]) are not presented separately because of small numbers. However, because they are included in the overall motor vehicle traffic category, the sum of these categories can be derived by subtraction.
[3]Codes in bold are for morbidity coding only. For details see table 2.
[4]E849 (place of occurrence) has been excluded from the matrix. For mortality coding, an *ICD-9* E849 code does not exist. For morbidity coding, an *ICD-9-CM* E849 code should never be first-listed E code and should only appear as an additional code to specify the place of occurrence of the injury incident.

Note: ICD-9 E codes for coding underlying cause of death apply to injury-related death data from 1979 through 1998. Then there is a new ICD-10 external cause of injury matrix that applies to death data from 1999 and after. This can be found on the National Center for Health Statistics website at http://www.cdc.gov/nchs/about/otheract/ice/projects.htm.

Table 2: Injury Intentionality CDC Matrix

Mechanism/Cause	Manner/Intent				
	Unintentional	**Self-inflicted**	**Assault**	**Undetermined**	**Other**
Transport, other	E800-E807 (.0,.1,.8,.9) E820-E825 (.0-.5,.8,.9) E826.2-.8 E827-E829 (.2-.9) E831.0-.9, E833.0-E845.9	E958.6		E988.6	
Natural/environmental	E900.00-E909, E928.0-.2	E958.3		E958.3	
Bites/stings[3]	E905.0-.6,.9 E906.0-.4,.5,.9				
Overexertion	E927				
Poisoning	E850.0-E869.9	E950.0-E952.9	E962.0-.9, **E979.6,.7**	E980.0-E982.9	E972
Struck by, against	E916-E917.9		E960.0; E968.2		E973, E975
Suffocation	E911-E913.9	E953.0-.9	E963	E983.0-.9	
Other specified and classifiable[3,4]	E846-E848, E914-E915 E918, E921.0-39, **E922.4,.5** E923.0-.9, E925.0-E926.9 **E928(.3-.5),** E929.0-.5	E9555**,.6,.7,**.9 E958.0,.4	E960.1,E965.5-.9 E967.0-.9, E968.4,.**6,.7** **E979 (.0-.2,.5,.8,.9)**	E985.5**,.6,.7** E988.0,.4	E971, E978 E990-E994, E996 E997.0-.2
Unspecified	E887. E928.9, E929.9	E958.9	E968.9	E988.9	E976, E997.9
All Injury[3]	E800-E869, E880-E929	E950-E959	E960-E969, **E979**, E999.1	E980-E989	E970-E978, E990-E999.0
Adverse effects					E870-E879 E930.0-E949.9
Medical care					E870-E879
Drugs					E930.0-E949.9
All external causes					E800-E999

[1]Includes legal intervention (E970-E978) and operations of war (E990-E999).
[2]Three 4th-digit codes (.4 [occupant of streetcar], .5 [rider of animal], .8 [other specified person]) are not presented separately because of small numbers. However, because they are included in the overall motor vehicle traffic category, the sum of these categories can be derived by subtraction.
[3]Codes in bold are for morbidity coding only. For details see table 2.
[4]E849 (place of occurrence) has been excluded from the matrix. For mortality coding, an *ICD-9* E849 code does not exist. For morbidity coding, an *ICD-9-CM* E849 code should never be first-listed E code and should only appear as an additional code to specify the place of occurrence of the injury incident.
Note: ICD-9 E codes for coding underlying cause of death apply to injury-related death data from 1979 through 1998. Then there is a new ICD-10 external cause of injury matrix that applies to death data from 1999 and after. This can be found on the National Center for Health Statistics website at http://www.cdc.gov/nchs/about/otheract/ice/projects.htm

Appendix 2: Hospital Characteristics received at time of Data Submission

The Purpose of Variables Defining Hospital Characteristics

This appendix defines variables which are collected at the time of hospital registration (and data submission) that are "attached" to each submitted trauma registry case. The purpose of these variables is to allow researchers, state entities and others to stratify data analyses in ways that allow the efficacy of trauma care to be evaluated for different levels of care. Variables will allow both trauma center performance and trauma system performance to be evaluated and benchmarked. It is important to note that the anonymity of hospitals will be safeguarded in accordance with current California Statute, California Regulation, and specific requirements contained within existing Business Associate Agreements.

Examples of the type of national and state assessments that can be conducted using these variables include:

1. Injury severity/type by admitting hospital designation (i.e., an assessment of over-under triage).
2. The prevalence of injury severity/type presenting to frontier, rural, suburban and urban hospitals by bed size and available resources.
3. Procedure types by admitting hospital designation.
4. Length of stay by injury type and hospital designation.
5. Resource utilization by injury characteristics (e.g., procedures, ICU LOS, insurance, etc.) and hospital size and designation.
6. Frequency of inter-facility transfer after hospitalization by injury severity and hospital trauma designation.
7. Hospital complications by injury characteristics, hospital designation and patient age.

Variables describing hospital characteristics are completed by personnel at each hospital on an annual basis (at the time of data submission to the State of California). Responses to each variable are stored and automatically attached to each record sent to the California State Trauma Data Bank. The description of the variables attached to each record is categorized into three sections (Hospital Characteristics, Patient Inclusion Criteria, and Pediatric Care) Variables and the associated value labels are provided below:

Variables	Values
Hospital Information	
Facility Name	
Department Name	
Address	*Street; City; State; County; ZIP*
Phone/Fax Number	*xxx-xxx-xxxx*
Phone Extension	*xxxx*
Registry Type	*Hospital; Third Party; Both*
Other Registries	
Other Registries Submitted	*State; Regional; Other; None*
Contacts	
Primary Contact Name	
Primary Contact Title	
Primary Contact Email Address	
Primary Contact Address	*Street; City; State; ZIP*
Primary Contact Phone	*xxx-xxx-xxxx; Extension*
Primary Contact Fax	*xxx-xxx-xxxx*
Secondary Contact Name	
Secondary Contact Title	
Secondary Contact Email Address	
Secondary Contact Address	*Street; City; State; ZIP*
Secondary Contact Phone	*xxx-xxx-xxxx; Extension*
Secondary Contact Fax	*xxx-xxx-xxxx*
Trauma Medical Director Contact Name	
TMD Contact Title	
TMD Contact Email Address	
TMD Contact Address	*Street; City; State; ZIP*
TMD Contact Phone	*xxx-xxx-xxxx; Extension*
TMD Contact Fax	*xxx-xxx-xxxx*
Additional Contact Name	
Additional Contact Title	
Additional Contact Email	

Facility Characteristics	
American College of Surgeons Verification Level	*I; II; III; IV; Not applicable*
American College of Surgeons Pediatric Verification Level	*I; II; Not applicable*
Local EMS Agency Designation	*I; II; III; IV; Other; Not applicable*
Local EMS Agency Pediatric Designation	*I; II; Other; Not applicable*
Number of Beds (for)	*Adult; Pediatric; Burn; ICU for trauma patients; ICU for burn patients*
Hospital Teaching Status	*University; Community; Non-teaching*
Hospital Type	*For Profit; Non-profit*
Number of Staff	*Core Trauma Surgeons; Neurosurgeons, Orthopedic Surgeons; Trauma Registrars/Data Abstractors (FTEs); Certified Registrars*
Comorbidity Recording	*Derived from ICD-9 coding; Chart abstraction by trauma registrar; Calculated by software registry program; Not Collected*
Complication Recording	*Derived from ICD-9 coding; Chart abstraction by trauma registrar; Calculated by software registry program; Not Collected*
Registry Software Type	*DI Collector; DI (ACS) NTRACS; Inspirionix Trauma Data Pro; DI (formerly Cales)Trauma!; Lancet / Trauma One; CDM Trauma Base; ImageTrend TraumaBridge; TriAnalytics Collector; Midas+; Hospital Mainframe; The San Diego Registry; Other*
Trauma Registry Version Number	
AIS Coding	
AIS Coding	*80 – Full code (description plus severity, XXXXXX.Y); 85 – Full code (description plus severity, XXXXXX.Y); 90 – Full code (description plus severity, XXXXXX.Y);* 95 – *Full code (description plus severity, XXXXXX.Y); 98 – Full code (description plus severity, XXXXXX.Y); 05 – Full code (description plus severity, XXXXXX.Y); ICD Map; Tri-Code; AIS80 Only (Severity Only, .Y); AIS85 Only (Severity Only, .Y); AIS90 Only (Severity Only, .Y); AIS95 Only (Severity Only, .Y); AIS98 Only (Severity Only, .Y); AIS05 Only (Severity Only, .Y), Other, Not Applicable*

Patient Inclusion/Exclusion Criteria	
Length of Stay Included	*23 Hour Holds; > = 24 hours; > = 48 hours; > = 72 hours; All Admissions*
Hip Fractures Included	*None; Patients <=18 years; Patients <=50 years; Patients <=55 years; Patients <=60 years; Patients <=65 years; Patients <=70 years; All*
DOA's In ED Included	*Yes/No*
Deaths after receiving any evaluation/treatment (including died in ED) Included	*Yes/No*
Transfers Into Your Facility Included	*All transfers; within 4 hours; within 8 hours; within 12 hours; within 24 hours; within 48 hours; within 72 hours; none*
Transfers Our of Your Facilities Included	*Yes/No*
AIS Code Inclusion Range	*All AIS codes included (none excluded); Range 1 (_ to _); Range 2 (_ to _); Range 3 (_ to _)*
AIS Code Exclusion Range	*Range 1 (_ to _); Range 2 (_ to _); Range 3 (_ to _)*
Do you have inclusion/exclusion criteria that are not fully described by your responses in this section?	*Yes/No*
ICD-9 Diagnosis Code Inclusion Range	*Same ICD-9 code ranges as NTDB criteria; Range 1 (_ to _); Range 2 (_ to _); …; Range 10 (_ to _)*
ICD-9 Diagnosis Code Exclusion Range	*Range 1 (_ to _); Range 2 (_ to _); …; Range 10 (_ to _)*
Pediatric Care	
Are you associated with a pediatric hospital?	*Yes/No*
Do you have a pediatric ward?	*Yes/No*
Do you have a pediatric ICU?	*Yes/No*
Do you transfer the most severely injured children to other specialty centers?	*Yes/No*
How do you provide care to injured children?	*No Children (not applicable); Provide all acute care services; Shared role with another center*
What is the oldest age for pediatric patients in your facility?	*10, 11, 12, …, 21, none*

AHA IDENTIFICATION NUMBER (H_01)

H_01

Data Format [number] ***California/National Minimum Element***

Definition

The number assigned to the admitting hospital by the American Hospital Association.

XSD Data Type *xs:string*		**XSD Element / Domain (Simple Type)** *AHAHospitalNumber*	
Multiple Entry Configuration No		**Accepts Null Value** Yes, common null values	
Required in XSD Yes		**Minimum Constraint** 1	**Maximum Constraint** 8

Field Values

- First 7 characters must be a numeric.
- The 8th character is optional and must be alphanumeric
- Relevant value for data element
- To be provided by the EMS Authority

Additional Information

- Used to stratify data by type of hospital.

Data Collection

- Autofill, updated yearly

Other Associated Elements

- Hospital Trauma Designation
- Level of Trauma Center Designation
- Trauma Center Designation Body

HOSPITAL TRAUMA VERIFICATION/DESIGNATION (H_01)

H_02

Data Format [combo] single-choice ***California/National Minimum Element***

Definition

Determination of whether the hospital has been verified and/or designated as a trauma center.

XSD Data Type *xs:integer* **XSD Element / Domain (Simple Type)** *HospitalTraumaDesignation*
Multiple Entry Configuration No **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 Yes

2 No

Additional Information

- A trauma center is a hospital that is designated by a state or local authority or is verified by the American College of Surgeons.
- *If the hospital is a verified/designated trauma center, two additional data fields should be completed: Level of Trauma Center Designation and Trauma Center Designating Body.*

Uses

- Allows data to be sorted based upon trauma center designation.

Data Collection

- Autofill, updated yearly

Other Associated Elements

- AHA Hospital Number
- Level of Trauma Center Designation
- Trauma Center Designating Body

LEVEL OF TRAUMA CENTER (Adult) (H_03)

H_03

Data Format [combo] single-choice — ***California/National Minimum Element***

Definition

Determination of trauma center level at which the hospital is verified and/or designated.

XSD Data Type *xs:integer* — **XSD Domain (Simple Type)** *LevelTraumaDesignationA*
Multiple Entry Configuration No — **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 Adult Level – 1

2 Adult Level – 2

3 Adult Level – 3

4 Adult Level 4/5/Unspecified

5 No adult level assigned

Additional Information

- *Only completed if "Hospital Trauma Designation" (H_02) is marked "Yes".*

Uses

- Allows data to be sorted based upon trauma center designation.

Data Collection

- Autofill, updated yearly.

Other Associated Elements

- AHA Hospital Number
- Hospital Trauma Designation
- Level of Trauma Center (Pediatric)
- Trauma Center Designating Body

LEVEL OF TRAUMA CENTER (Pediatric) (H_04)

Data Format [combo] single-choice — ***California/National Minimum Element***

Definition

Determination of trauma center level at which the hospital is verified and/or designated.

XSD Data Type *xs:integer* — **XSD Domain (Simple Type)** *LevelTraumaDesignationP*
Multiple Entry Configuration No — **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 Pediatric Level -1

2 Pediatric Level – 2

3 No pediatric level assigned

Additional Information

- *Only completed if "Hospital Trauma Designation" (H_02) is marked "Yes".*

Uses

- Allows data to be sorted based upon trauma center designation.

Data Collection

- Autofill, updated yearly.

Other Associated Elements

- AHA Hospital Number
- Hospital Trauma Designation
- Trauma Center Designating Body

TRAUMA CENTER AUTHORITY (H_05)

H_05

Data Format [combo] single-choice — ***California/National Minimum Element***

Definition

Identification of the organization of governing body designating/verifying the trauma center.

XSD Data Type *xs:integer* — **XSD Domain (Simple Type)** *CenterDesignatingBody*
Multiple Entry Configuration No — **Accepts Null Value** Yes, common null values
Required in XSD Yes

Field Values

1 Verified by the American College of Surgeons

2 Designated by State or Local Authority

3 Verified by ACS and Designated by State or Local Authority

4 Self-designated

Additional Information

- *Only completed if "Hospital Trauma Designation" is marked "Yes".*

Uses

- Allows data to be sorted based upon trauma center designation.

Data Collection

- Autofill, updated yearly.

Other Associated Elements

- AHA Hospital Number
- Hospital Trauma Designation
- Level of Trauma Center Designation

Appendix 3: Edit Checks for the National Trauma Data Standard Data Elements

INTRODUCTION

The errors described in this Appendix are those that are produced by the Validator when an XML file is checked. The rule ID associated with each edit check has four digits with the first two being associated with a field in the data dictionary. The last two digits are sequentially assigned according to the message associated with the edit check rule.

There is an Error Level associated with each edit check and this is important to developers and to users alike and should be used to decide what checks (or errors) must be addressed before submitting to the State of California. Some errors are mandatory to address and some are somewhat discretionary. Ultimately the number of errors resolved in the submitted data is up to the individual submitter and the quality of data that is available for reporting and research in trauma registry. The Error Levels can be explained as follows:

Description of Error Levels

Error Level 1: Format / Schema* – any error that does not conform to the "rules" of the XSD. That is, these are errors that arise from XML data that cannot be parsed or would otherwise not be legal XML. Some errors in this Level do not have a Rule ID – for example: illegal tag, commingling of null values and actual data, out of range errors, etc.

Error Level 2: Inclusion Criteria and Analysis* – an error that affects the fields needed to determine if the record meets the inclusion criteria for State of California, or that are required for analysis. These fields currently include:

- *ED/Hospital Arrival Date*
- *ED Discharge Disposition*^
- *ED Death*
- *Injury Diagnoses*
- *Hospital Discharge Disposition*
- *Inter-Facility Transfer*^
- *Facility ID#*
- *Patient ID#*
- *Last Modified Date/Time*
- *Hospital Complications*
- *Comorbid Conditions*

Error Level 3: Major Logic – data consistency checks related to variables commonly used for reporting. Examples include DOB, Arrival Date, Gender, E-code, etc.

Error Level 4: Minor Logic – data consistency checks (e.g. dates) and blank fields that are acceptable to create a "valid" XML record but may cause certain parts of the record to be excluded from analysis.

Error Level 5: Data Entry Prompts – "data checks" in this category are recommended to developers to function as prompts for application users. These prompts should be more correctly termed "warnings" to inform users that they should double-check their entry or be required to complete additional fields.

Important Notes:

* Any XML file submitted to State of California that contains one or more Level 1 or 2 Errors will result in the entire file being rejected. These kinds of errors must be resolved before a submission will be accepted.

^ Submitting a null value (BIU) for *ED Discharge Disposition and Inter-Facility Transfer* is valid to do and will not generate a file rejection.

Facility ID, Patient ID and *Last Modified Date/Time* are not described in the data dictionary and are only required in the XML file as control information for back-end State of California processing. However, these fields are mandatory to provide in every XML record. Consult your Registry Vendor if one of these errors occurs.

Patient's Home Zip Code

Rule ID	Level	Message
0001	1	Invalid value
0002	4	Blank, required field
0003	5	Not Applicable, complete variable: *Alternate Home Residence*
0005	5	Not Known/Not Recorded, complete variables: *Patient's Home Country*, *Patient's Home State*, *Patient's Home County* and *Patient's Home City*

Patient's Home Country

Rule ID	Level	Message
0101	1	Invalid value
0102	4	Blank, required to complete when *Patient's Home Zip Code* is Not Known/Not Recorded
0103	5	Blank, required to complete variables: *Patient's Home Zip Code* or *Alternate Home Residence*

Patient's Home State

Rule ID	Level	Message
0201	1	Invalid value
0202	4	Blank, required to complete when *Patient's Home Zip Code* is Not Known/Not Recorded
0203	5	Blank, required to complete variables: *Patient's Home Zip Code* or *Alternate Home Residence*

Patient's Home County

Rule ID	Level	Message
0301	1	Invalid value
0302	4	Blank, required to complete when *Patient's Home Zip Code* is Not Known/Not Recorded
0303	5	Blank, required to complete variables: *Patient's Home Zip Code* or *Alternate Home Residence*

Patient's Home City

Rule ID	Level	Message
0401	1	Invalid value
0402	4	Blank, required to complete when *Patient's Home Zip Code* is Not Known/Not Recorded
0403	5	Blank, required to complete variables: *Patient's Home Zip Code* or *Alternate Home Residence*

Alternate Home Residence

Rule ID	Level	Message
0501	1	Invalid value
0502	4	Blank, required to complete when *Patient's Home Zip Code* is Not Applicable
0503	5	Blank, required to complete variables: *Patient's Home Zip Code* or (*Patient's Home Country*, *Patient's Home State*, *Patient's Home County* and *Patient's Home City*)

Date of Birth

Rule ID	Level	Message
0601	1	Invalid value
0602	1	Date out of range
0603	3	Blank, required to complete variables: *Age* and *Age Units* if less than 24 hours
0605	5	Not Known/Not Recorded, complete variables: *Age* and *Age Units*
0606	3	*Date of Birth* cannot be later than *EMS Dispatch Date*
0607	3	*Date of Birth* cannot be later than *EMS Unit Arrival on Scene Date*
0608	3	*Date of Birth* cannot be later than *EMS Unit Scene Departure Date*
0609	3	*Date of Birth* cannot be later than *ED/Hospital Arrival Date*
0610	3	*Date of Birth* cannot be later than *ED Discharge Date*
0611	3	*Date of Birth* cannot be later than *Hospital Discharge Date*
0612	3	*Date of Birth* + 120 must be less than *Ed/Hospital Arrival Date*

Age

Rule ID	Level	Message
0701	1	Invalid value
0702	5	Blank, required to complete variable: *Date of Birth*
0703	4	Blank, required to complete when *Date of Birth* is less than 24 hours or Not Known/Not Recorded
0704	3	*Ed/Hospital Arrival Date* minus *Date of Birth* must equal submitted *Age*.

Age Units

Rule ID	Level	Message
0801	1	Invalid value
0802	5	Blank, required to complete variable: *Date of Birth*
0803	4	Blank, required to complete when *Date of Birth* is less than 24 hours or Not Known/Not Recorded

Race

Rule ID	Level	Message
0901	1	Invalid value
0902	4	Blank, required field

Ethnicity

Rule ID	Level	Message
1001	1	Invalid value
1002	4	Blank, required field

Sex

Rule ID	Level	Message
1101	1	Invalid value
1102	3	Blank, required field

Injury Incident Date

Rule ID	Level	Message
1201	1	Invalid Value
1202	1	Date out of range
1203	4	Blank, required field
1204	4	*Injury Incident Date* cannot be earlier than *Date of Birth*
1205	4	*Injury Incident Date* cannot be later than *EMS Dispatch Date*
1206	4	*Injury Incident Date* cannot be later than *EMS Unit Arrival on Scene Date*
1207	4	*Injury Incident Date* cannot be later than *EMS Unit Scene Departure Date*
1208	4	*Injury Incident Date* cannot be later than *ED/Hospital Arrival Date*
1209	4	*Injury Incident Date* cannot be later than *ED Discharge Date*
1210	4	*Injury Incident Date* cannot be later than *Hospital Discharge Date*

Injury Incident Time

Rule ID	Level	Message
1301	1	Invalid value
1302	1	Time out of range
1303	4	Blank, required field
1304	4	If *Injury Incident Date* and *EMS Dispatch Date* are the same, the *Injury Incident Time* cannot be later than the *EMS Dispatch Time*
1305	4	If *Injury Incident Date* and *EMS Unit Arrival on Scene Date* are the same, the *Injury Incident Time* cannot be later than the *EMS Unit Arrival on Scene Time*
1306	4	If *Injury Incident Date* and *EMS Unit Scene Departure Date* are the same, the *Injury Incident Time* cannot be later than the *EMS Unit Scene Departure Time*
1307	4	If *Injury Incident Date* and *ED/Hospital Arrival Date* are the same, the *Injury Incident Time* cannot be later than the *ED/Hospital Arrival Time*
1308	4	If *Injury Incident Date* and *ED Discharge Date* are the same, the *Injury Incident Time* cannot be later than the *ED Discharge Time*
1309	4	If *Injury Incident Date* and *Hospital Discharge Date* are the same, the *Injury Incident Time* cannot be later than the *Hospital Discharge Time*

Work-Related

Rule ID	Level	Message
1401	1	Invalid value
1402	4	Blank, required field
1403	5	If Yes, then *Patient's Occupational Industry* must be completed
1404	5	If Yes, then *Patient Occupation* must be completed

Patient's Occupational Industry

Rule ID	Level	Message
1501	1	Invalid value
1502	4	If completed, then *Work-Related* must be 1 Yes
1503	5	If completed, then *Patient Occupation* must be completed
1504	4	Blank, required to complete when *Work-Related* is 1 (Yes)

Patient's Occupation

Rule ID	Level	Message
1601	1	Invalid value
1602	4	If completed, then Work-Related must be 1 Yes
1603	5	If completed, then *Patient's Occupational Industry* must be completed
1604	4	Blank, required to complete when *Work-Related* is 1 (Yes)

Primary E-Code

Rule ID	Level	Message
1701	1	Invalid, out of range
1702	3	Blank, required field (at least one ICD-9-CM trauma code must be entered)
1703	4	*E-code* should not be = (810.0, 811.0, 812.0, 813.0, 814.0, 815.0, 816.0, 817.0, 818.0, 819.0) and *Age* < 15
1704	3	Should not be 849.x

Location E-Code

Rule ID	Level	Message
1801	1	Invalid, out of range
1802	4	Blank, required field

Additional E-Code

Rule ID	Level	Message
1901	1	Invalid, out of range
1902	4	If completed, *Additional E-Code* cannot be equal to *Primary E-Code*.

Incident Location Zip Code

Rule ID	Level	Message
2001	1	Invalid value
2002	4	Blank, required field
2004	5	Not Known/Not Recorded, complete variables: *Incident State*, *Incident County* and *Incident City*
2005	5	Not Applicable, complete variables: *Incident State*, *Incident County* and Incident City

Incident Country

Rule ID	Level	Message
2101	1	Invalid value
2102	4	Blank, required to complete when *Incident Location Zip Code* is Not Applicable or Not Known/Not Recorded
2103	5	Blank, required to complete variable: *Incident Location Zip Code*

Incident State

Rule ID	Level	Message
2201	1	Invalid value
2202	5	Blank, required to complete variable: *Incident Location Zip Code*
2203	4	Blank, required to complete when *Incident Location Zip Code* is Not Applicable or Not Known/Not Recorded

Incident County

Rule ID	Level	Message
2301	1	Invalid value
2302	5	Blank, required to complete variable: *Incident Location Zip Code*
2303	4	Blank, required to complete when *Incident Location Zip Code* is Not Applicable or Not Known/Not Recorded

Incident City

Rule ID	Level	Message
2401	1	Invalid value
2402	5	Blank, required to complete variable: *Incident Location Zip Code*
2403	4	Blank, required to complete when *Incident Location Zip Code* is Not Applicable or Not Known/Not Recorded

Protective Devices

Rule ID	Level	Message
2501	1	Invalid value
2502	4	Blank, required field
2503	5	If *Protective Device* = 6 (Child Restraint) then *Child Specific Restraint* must be completed
2504	5	If *Protective Device* = 8 (Airbag Present) then *Airbag Deployment* must be completed

Child Specific Restraint

Rule ID	Level	Message
2601	1	Invalid value
2602	3	If completed, then *Protective Device* must be 6 (Child Restraint).
2603	4	Blank, required to complete when *Protective Device* is 6 (Child Restraint)

Airbag Deployment

Rule ID	Level	Message
2701	1	Invalid value
2702	3	If completed, then *Protective Device must be* 8 (Airbag Present).
2703	4	Blank, required to complete when *Protective Device* is 8 (Airbag Present)

EMS Dispatch Date

Rule ID	Level	Message
2801	1	Invalid value
2802	1	Date out of range
2803	4	*EMS Dispatch Date* cannot be earlier than *Date of Birth*
2804	4	*EMS Dispatch Date* cannot be later than *EMS Unit Arrival on Scene Date*
2805	4	*EMS Dispatch Date* cannot be later than *EMS Unit Scene Departure Date*
2806	4	*EMS Dispatch Date c*annot be later than *ED/Hospital Arrival Date*
2807	4	*EMS Dispatch Date* cannot be later than *ED Discharge Date*
2808	4	*EMS Dispatch Date* cannot be later than *Hospital Discharge Date*

EMS Dispatch Time

Rule ID	Level	Message
2901	1	Invalid value
2902	1	Time out of range
2903	4	If *EMS Dispatch Date* and *EMS Unit Arrival* on *Scene Date* are the same, the *EMS Dispatch Time* cannot be later than the *EMS Unit Arrival on Scene Time*
2904	4	If *EMS Dispatch Date* and *EMS Unit Scene Departure Date* are the same, the *EMS Dispatch Time* cannot be later than the *EMS Unit Scene Departure Time*
2905	4	If *EMS Dispatch Date* and *ED/Hospital Arrival Date* are the same, the *EMS Dispatch Time* cannot be later than the *ED/Hospital Arrival Time*
2906	4	If *EMS Dispatch Date* and *ED Discharge Date* are the same, the *EMS Dispatch Time* cannot be later than the *ED Discharge Time*
2907	4	If *EMS Dispatch Date* and *Hospital Discharge Date* are the same, the *EMS Dispatch Time* cannot be later than the *Hospital Discharge Time*

EMS Unit Arrival on Scene Date

Rule ID	Level	Message
3001	1	Invalid value
3002	1	Date out of range
3003	4	*EMS Unit Arrival on Scene Date* cannot be earlier than *Date of Birth*
3004	4	*EMS Unit Arrival on Scene Date* cannot be earlier than *EMS Dispatch Date*
3005	4	*EMS Unit Arrival on Scene Date* cannot be later than *EMS Unit Scene Departure Date*
3006	4	*EMS Unit Arrival on Scene Date* cannot be later than *ED/Hospital Arrival Date*
3007	4	*EMS Unit Arrival on Scene Date* cannot be later than *ED Discharge Date*
3008	4	*EMS Unit Arrival on Scene Date* and cannot be later than *Hospital Discharge Date*
3009	3	*EMS Unit Arrival on Scene Date minus EMS Dispatch Date cannot be greater than 7 days.*

EMS Unit Arrival on Scene Time

Rule ID	Level	Message
3101	1	Invalid value
3102	1	Time out of range
3103	4	If *EMS Unit Arrival on Scene Date* and *EMS Dispatch Date* are the same, the *EMS Unit Arrival on Scene Time* cannot be earlier than the *EMS Dispatch Time*
3104	4	If *EMS Unit Arrival on Scene Date* and *EMS Unit Scene Departure Date are* the same, the *EMS Unit Arrival on Scene Time* cannot be later than the *EMS Unit Scene Departure Time*
3105	4	If *EMS Unit Arrival on Scene Date* and *ED/Hospital Arrival Date* are the same, the *EMS Unit Arrival on Scene Time* cannot be later than the *ED/Hospital Arrival Time*
3106	4	If *EMS Unit Arrival on Scene Date* and *ED Discharge Date* are the same, the *EMS Unit Arrival on Scene Time* cannot be later than the *ED Discharge Time*
3107	4	if *EMS Unit Arrival on Scene Date* and *Hospital Discharge Date* are the same, the *EMS Unit Arrival on Scene Time* cannot be later than the *Hospital Discharge Time*

EMS Unit Scene Departure Date

Rule ID	Level	Message
3201	1	Invalid value
3202	1	Date out of range
3203	4	*EMS Unit Scene Departure Date* cannot be earlier than *Date of Birth*
3204	4	*EMS Unit Scene Departure Date* cannot be earlier than *EMS Dispatch Date*
3205	4	*EMS Unit Scene Departure Date* cannot be earlier than *EMS Unit Arrival on Scene Date*
3206	4	*EMS Unit Scene Departure Date* cannot be later than *ED/Hospital Arrival Date*
3207	4	*EMS Unit Scene Departure Date* cannot be later than *ED Discharge Date*
3208	4	*EMS Unit Scene Departure Date* cannot be later than *Hospital Discharge Date*
3209	3	*EMS Unit Scene Departure Date minus EMS Unit Arrival on Scene Date cannot be greater than 7 days.*

EMS Unit Scene Departure Time

Rule ID	Level	Message
3301	1	Invalid value
3302	1	Time out of range
3303	4	If *EMS Unit Scene Departure Date* and *EMS Dispatch Date* are the same, the *EMS Unit Scene Departure Time* cannot be earlier than the *EMS Dispatch Time*
3304	4	If *EMS Unit Scene Departure Date* and *EMS Unit Arrival on Scene Date* are the same, the *EMS Unit Scene Departure Time* cannot be earlier than the *EMS Unit Arrival on Scene Time*
3305	4	if *EMS Unit Scene Departure Date* and *ED/Hospital Arrival Date* are the same, the *EMS Unit Scene Departure Time* cannot be later than the *ED/Hospital Arrival Time*
3306	4	If *EMS Unit Scene Departure Date* and *ED Discharge Date* are the same, the *EMS Unit Scene Departure Time* cannot be later than the *ED Discharge Time*
3307	4	If *EMS Unit Scene Departure Date* and *Hospital Discharge Date* are the same, the *EMS Unit Scene Departure Time* cannot be later than the *Hospital Discharge Time*

Transport Mode

Rule ID	Level	Message
3401	1	Invalid value
3402	4	Blank, required field
3403	4	If EMS response times are provided, *Transport Mode* cannot be 4 (Private/Public Vehicle/Walk-in)

Other Transport Mode

Rule ID	Level	Message
3501	1	Invalid value

Initial Field Systolic Blood Pressure

Rule ID	Level	Message
3601	1	Invalid value
3602	4	Blank, required field
3603	3	Invalid, out of range

Initial Field Pulse Rate

Rule ID	Level	Message
3701	1	Invalid value
3702	4	Blank, required field
3703	3	Invalid, out of range

Initial Field Respiratory Rate

Rule ID	Level	Message
3801	1	Invalid value
3802	4	Blank, required field
3803	3	Invalid, out of range

Initial Field Oxygen Saturation

Rule ID	Level	Message
3901	1	Invalid value
3902	4	Blank, required field

Initial Field GCS – Eye

Rule ID	Level	Message
4001	1	Invalid, out of range
4002	5	Blank, required to complete variable: *Initial Field GCS – Total*

Initial Field GCS – Verbal

Rule ID	Level	Message
4101	1	Invalid, out of range
4102	5	Blank, required to complete variable: *Initial Field GCS – Total*

Initial Field GCS – Motor

Rule ID	Level	Message
4201	1	Invalid, out of range
4202	5	Blank, required to complete variable: *Initial Field GCS – Total*

Initial Field GCS – Total

Rule ID	Level	Message
4301	1	Invalid, out of range
4302	5	Blank, required to complete variables: *Initial Field GCS – Eye, Initial Field GCS – Verbal,* and *Initial Field GCS – Motor*
4303	4	*Initial Field GCS – Total* does not equal the sum of *Initial Field GCS – Eye, Initial Field GCS – Verbal,* and *Initial Field GCS – Motor*

*Inter-Facility Transfer**

Rule ID	Level	Message
4401	3	Blank, required field
4402	1	Invalid value
4404	3	Not Known/Not Recorded, required Inclusion Criterion

*ED/Hospital Arrival Date**

Rule ID	Level	Message
4501	1	Invalid value
4502	1	Date out of range
4503	2	Blank, required field
4505	2	Not Known/Not Recorded, required Inclusion Criterion
4506	3	*ED/Hospital Arrival Date* cannot be earlier than *EMS Dispatch Date*
4507	3	*ED/Hospital Arrival Date* cannot be earlier than *EMS Unit Arrival on Scene Date*
4508	3	*ED/Hospital Arrival Date* cannot be earlier than *EMS Unit Scene Departure Date*
4509	3	*ED/Hospital Arrival Date* cannot be later than *ED Discharge Date*
4510	3	*ED/Hospital Arrival Date* cannot be later than *Hospital Discharge Date*
4511	3	*ED/Hospital Arrival Date* cannot be earlier than *Date of Birth*
4512	3	*Ed/Hospital Arrival Date* must be after 1993
4513	3	*Ed/Hospital Arrival Date* minus *Injury Incident Date* must be less than 30 days
4514	3	*ED/Hospital Arrival Date minus EMS Dispatch Date cannot be greater than 7 days.*

ED/Hospital Arrival Time

Rule ID	Level	Message
4601	1	Invalid value
4602	1	Time out of range
4603	4	Blank, required field
4604	4	If *ED/Hospital Arrival Date* and *EMS Dispatch Date* are the same, the *ED/Hospital Arrival Time* cannot be earlier than the *EMS Dispatch Time*
4605	4	If *ED/Hospital Arrival Date* and *EMS Unit Arrival on Scene Date* are the same, the *ED/Hospital Arrival Time* cannot be earlier than the *EMS Unit Arrival on Scene Time*
4606	4	If *ED/Hospital Arrival Date* and *EMS Unit Scene Departure Date* are the same, the *ED/Hospital Arrival Time* cannot be earlier than the *EMS Unit Scene Departure Time*
4607	4	if *ED/Hospital Arrival Date* and *ED Discharge Date* are the same, the *ED/Hospital Arrival Time* cannot be later than the *ED Discharge Time*
4608	4	if *ED/Hospital Arrival Date* and *Hospital Discharge Date* are the same, the *ED/Hospital Arrival Time* cannot be later than the *Hospital Discharge Time*

Initial ED/Hospital Systolic Blood Pressure

Rule ID	Level	Message
4701	1	Invalid value
4702	4	Blank, required field
4703	4	*Initial Ed / Hospital Systolic Blood Pressure* must be 0 when *Ed Death* = 1 (DOA).
4704	3	Invalid, out of range

Initial ED/Hospital Pulse Rate

Rule ID	Level	Message
4801	1	Invalid value
4802	4	Blank, required field
4803	4	*Initial Ed / Hospital Pulse Rate* must be 0 when *Ed Death* = 1 (DOA).
4804	3	Invalid, out of range

Initial ED/Hospital Temperature

Rule ID	Level	Message
4901	1	Invalid value
4902	4	Blank, required field
4903	3	Invalid, out of range

Initial ED/Hospital Respiratory Rate

Rule ID	Level	Message
5001	1	Invalid value
5002	4	Blank, required field
5003	4	*Initial ED/Hospital Respiratory Rate* must be 0 when *Ed Death* = 1 (DOA).
5004	5	If completed, then *Initial Ed/Hospital Respiratory Assistance* must be completed.
5005	3	Invalid, out of range

Initial ED/Hospital Respiratory Assistance

Rule ID	Level	Message
5101	1	Invalid value
5102	4	Blank, required field
5103	4	Blank, required to complete when *Initial ED/Hospital Respiratory Rate* is complete

Initial ED/Hospital Oxygen Saturation

Rule ID	Level	Message
5201	1	Invalid value
5202	4	Blank, required field
5203	5	If completed, then *Initial Ed/Hospital Supplemental Oxygen* must be completed

Initial ED/Hospital Supplemental Oxygen

Rule ID	Level	Message
5301	1	Invalid value
5302	4	Blank, required field
5303	4	Blank, required to complete when *Initial ED/Hospital Oxygen Saturation* is complete

Initial ED/Hospital GCS – Eye

Rule ID	Level	Message
5401	1	Invalid, out of range
5402	5	Blank, required to complete variable: *Initial ED/Hospital GCS – Total*

Initial ED/Hospital GCS – Verbal

Rule ID	Level	Message
5501	1	Invalid, out of range
5502	5	Blank, required to complete variable: *Initial ED/Hospital GCS – Total*

Initial ED/Hospital GCS – Motor

Rule ID	Level	Message
5601	1	Invalid, out of range
5602	5	Blank, required to complete variable: *Initial ED/Hospital GCS – Total*

Initial ED/Hospital GCS – Total

Rule ID	Level	Message
5701	1	Invalid, out of range
5702	5	Blank, required to complete variables: *Initial ED/Hospital GCS – Eye, Initial ED/Hospital GCS – Verbal, and Initial ED/Hospital GCS – Motor*
5703	4	*Initial ED/Hospital GCS – Total* does not equal the sum of *Initial ED/Hospital GCS – Eye, Initial ED/Hospital GCS – Verbal,* and *Initial ED/Hospital GCS – Motor*

Initial ED/Hospital GCS Assessment Qualifiers

Rule ID	Level	Message
5801	1	Invalid value
5802	4	Blank, required field

Alcohol Use Indicator

Rule ID	Level	Message
5901	1	Invalid value
5902	4	Blank, required field

Drug Use Indicator

Rule ID	Level	Message
6001	1	Invalid value
6002	4	Blank, required field

*ED Discharge Disposition**

Rule ID	Level	Message
6101	1	Invalid value
6102	3	Blank, required field
6104	3	Not Known/Not Recorded, required Inclusion Criterion

*ED Death**

Rule ID	Level	Message
6201	1	Invalid value
6202	3	Blank, required field
6203	2	If *Ed Discharge Disposition* = 5 (Died) then *Ed Death* must be complete.
6204	3	If *Ed Discharge Disposition* <> 5 (Died) then *Ed Death* should be NA (BIU = 1)
6206	3	Not Known/Not Recorded, required Inclusion Criterion

ED Discharge Date

Rule ID	Level	Message
6301	1	Invalid value
6302	1	Date out of range
6303	4	Blank, required field
6304	4	*ED Discharge Date* cannot be earlier than *EMS Dispatch Date*
6305	4	*ED Discharge Date* cannot be earlier than *EMS Unit Arrival on Scene Date*
6306	4	*ED Discharge Date* cannot be earlier than *EMS Unit Scene Departure Date*
6307	4	*ED Discharge Date* cannot be earlier than *ED/Hospital Arrival Date*
6308	4	*ED Discharge Date* cannot be later than *Hospital Discharge Date*
6309	4	*ED Discharge Date* cannot be earlier than *Date of Birth*
6310	3	*ED Discharge Date* minus *ED/Hospital Arrival Date* cannot be greater than 365 days.

ED Discharge Time

Rule ID	Level	Message
6401	1	Invalid value
6402	1	Time out of range
6403	4	Blank, required field
6404	4	If *ED Discharge Date* and *EMS Dispatch Date* are the same, the *ED Discharge Time* cannot be earlier than the *EMS Dispatch Time*
6405	4	If *ED Discharge Date* and *EMS Unit Arrival on Scene Date* are the same, the *ED Discharge Time* cannot be earlier than the *EMS Unit Arrival on Scene Time*
6406	4	If *ED Discharge Date* and *EMS Unit Scene Departure Date* are the same, the *ED Discharge Time* cannot be earlier than the *EMS Unit Scene Departure Time*
6407	4	If *ED Discharge Date* and *ED/Hospital Arrival Date* are the same, the *ED Discharge Time* cannot be earlier than the *ED/Hospital Arrival Time*
6408	4	If *ED Discharge Date* and *Hospital Discharge Date* are the same, the *ED Discharge Time* cannot be later than the *Hospital Discharge Time*

Hospital Procedure Information

Hospital Procedures

Rule ID	Level	Message
6501	1	Invalid value
6502	1	Procedures with the same code cannot have the same *Hospital Procedure Start Date* and *Time.*
6503	4	Blank, required field
6504	4	Hospital Procedures must be BIU=1 (NA) when ED Death=1 (DOA)

Hospital Procedure Start Date

Rule ID	Level	Message
6601	1	Invalid value
6602	1	Date out of range
6603	4	*Hospital Procedure Start Date* cannot be earlier than *EMS Dispatch Date*
6604	4	*Hospital Procedure Start Date* cannot be earlier than *EMS Unit Arrival on Scene Date*
6605	4	*Hospital Procedure Start Date* cannot be earlier than *EMS Unit Scene Departure Date*
6606	4	*Hospital Procedure Start Date* cannot be earlier than *ED/Hospital Arrival Date*
6607	4	*Hospital Procedure Start Date* cannot be later than *Hospital Discharge Date*
6608	4	*Hospital Procedure Start Date* cannot be earlier than *Date of Birth*
6609	4	Blank, required field

Hospital Procedure Start Time

Rule ID	Level	Message
6701	1	Invalid value
6702	1	Time out of range
6703	4	If *Hospital Procedure Start Date* and *EMS Dispatch Date* are the same, the *Hospital Procedure Start Time* cannot be earlier than the *EMS Dispatch Time*
6704	4	If *Hospital Procedure Start Date* and *EMS Unit Arrival on Scene Date* are the same, the *Hospital Procedure Start Time* cannot be earlier than the *EMS Unit Arrival on Scene Time*
6705	4	if *Hospital Procedure Start Date* and *EMS Unit Scene Departure Date* are the same, the *Hospital Procedure Start Time* cannot be earlier than the *EMS Unit Scene Departure Time*
6706	4	If *Hospital Procedure Start Date* and *ED/Hospital Arrival Date* are the same, the *Hospital Procedure Start Time* cannot be earlier than the *ED/Hospital Arrival Time*
6707	4	If *Hospital Procedure Start Date* and *Hospital Discharge Date* are the same, the *Hospital Procedure Start Time* cannot be later than the *Hospital Discharge Time*
6708	4	Blank, required field

Co-Morbid Conditions

Rule ID	Level	Message
6801	1	Invalid value
6802	2	Blank, required field

*Injury Diagnoses**

Rule ID	Level	Message
6901	1	Invalid value
6902	4	Blank, required field
6903	2	At least one diagnosis must be provided and meet inclusion criteria (800 – 959.9, except for 905 – 909.9, 910 – 924.9, 930 – 939.9)

Injury Severity Information

AIS PreDot Code

Rule ID	Level	Message
7001	1	Invalid value
7002	5	If completed, then *AIS Severity* must be completed.
7003	5	If completed, then *AIS Version* must be completed.

AIS Severity

Rule ID	Level	Message
7101	1	Invalid value
7102	5	If completed, then *AIS Version* must be completed.
7103	4	Blank, required to complete when *AIS PreDot Code* is complete

ISS Body Region

Rule ID	Level	Message
7201	1	Invalid value
7202	5	If completed, then *AIS Severity* must be completed.
7203	5	If completed, then *AIS Version* must be completed.

AIS Version

Rule ID	Level	Message
7301	1	Invalid value
7302	4	Blank, required to complete when AIS PreDot Code, AIS Severity, or ISS Body Region are provided.

Locally Calculated ISS

Rule ID	Level	Message
7401	1	Invalid value
7402	3	Must be the sum of three squares

Total ICU Length of Stay

Rule ID	Level	Message
7501	1	Invalid value
7502	3	Blank, required field
7503	3	*Total ICU Length of Stay* should not be greater than the difference between *ED/Hospital Arrival Date* and *Hospital Discharge Date*
7504	3	*Should not be greater than 365*

Total Ventilator Days

Rule ID	Level	Message
7601	1	Invalid value
7602	4	Blank, required field
7603	4	*Total Ventilator Days* should not be greater than the difference between *ED/Hospital Arrival Date* and *Hospital Discharge Date*
7604	4	*Should not be greater than 365*

Hospital Discharge Date

Rule ID	Level	Message
7701	1	Invalid value
7702	1	Date out of range
7703	3	Blank, required field
7704	3	*Hospital Discharge Date* cannot be earlier than *EMS Dispatch Date*
7705	3	*Hospital Discharge Date* cannot be earlier than *EMS Unit Arrival on Scene Date*
7706	3	*Hospital Discharge Date* cannot be earlier than *EMS Unit Scene Departure Date*
7707	3	*Hospital Discharge Date* cannot be earlier than *ED/Hospital Arrival Date*
7708	3	*Hospital Discharge Date* cannot be earlier than *ED Discharge Date*
7709	3	*Hospital Discharge Date* cannot be earlier than *Date of Birth*
7710	3	*Hospital Discharge Date minus Injury Incident Date cannot be greater than 365 days.*
7711	3	*Hospital Discharge Date minus ED/Hospital Arrival Date cannot be greater than 365 days.*

Hospital Discharge Time

Rule ID	Level	Message
7801	1	Invalid value
7802	1	Time out of range
7803	4	Blank, required field
7804	4	If *Hospital Discharge Date* and *EMS Dispatch Date* are the same, the *Hospital Discharge Time* cannot be earlier than the *EMS Dispatch Time*
7805	4	If *Hospital Discharge Date* and *EMS Unit Arrival on Scene Date* are the same, the *Hospital Discharge Time* cannot be earlier than the *EMS Unit Arrival on Scene Time*
7806	4	If *Hospital Discharge Date* and *EMS Unit Scene Departure Date* are the same, the *Hospital Discharge Time* cannot be earlier than the *EMS Unit Scene Departure Time*
7807	4	If *Hospital Discharge Date* and *ED/Hospital Arrival Date* are the same, the *Hospital Discharge Time* cannot be earlier than the *ED/Hospital Arrival Time*
7808	4	If *Hospital Discharge Date* and *ED Discharge Date* are the same, the *Hospital Discharge Time* cannot be earlier than the *ED Discharge Time*

*Hospital Discharge Disposition**

Rule ID	Level	Message
7901	1	Invalid value
7902	3	Blank, required field
7903	2	If *ED Discharge Disposition* = 5 (Died) then *Hospital Discharge Disposition* should be NA (BIU=1).
7906	2	If ED Discharge Disposition = 1,2,3,7, or 8 then Hospital Discharge Disposition cannot be blank.
7907	2	If ED Discharge Disposition = 4,6,9,10, or 11 then Hospital Discharge Disposition must be NA (BIU = 1).

Primary Method of Payment

Rule ID	Level	Message
8001	1	Invalid value
8002	4	Blank, required field

Hospital Complications

Rule ID	Level	Message
8101	1	Invalid value
8102	2	Blank, required field

Control Information

Last Modified Date Time

Rule ID	Level	Message
8201	1	Invalid value
8202	2	Blank, required field

Patient ID

Rule ID	Level	Message
8301	1	Invalid value
8302	2	Blank, required field

Facility ID

Rule ID	Level	Message
8401	1	Invalid value
8402	2	Blank, required field

*Inclusion criterion

Appendix 4: State of California Trauma Data Standard Data Scheme

Data Scheme

Demographic Variables

Patient's Home Zip Code: The patient's home ZIP code of primary residence.

If Patient's Home Zip Code is "Not Recorded," or "Not Known," the following four variables will be collected to generate a FIPS Code:

Patient's Home County: The patient's home county (or parish) of residence.

Patient's Home City: The patient's home city (or township, village) of residence.

If Patient's Home Zip Code is "Not Applicable," the following variable will be collected.

Alternate Home Residence: Documentation of the type of patient without a home Zip Code.

Date of Birth: The patient's date of birth.

If Date of Birth is "Not Recorded," "Not Known," or less than 24 hours, the following two variables will be collected to determine the patient's age:

Age: The patient's age at the time of injury (best approximation).

Age Units: The units used to document the patient's age (Years, Months, Days, Hours).

Race: The patient's race.

Ethnicity: The patient's ethnicity.

Sex: The patient's sex.

Injury Information

Injury Incident Date: The date the injury occurred.

Injury Incident Time: The time the injury occurred.

Work-Related: Indication of whether the injury occurred during paid employment.

If the injury is determined to be "Work-Related", the following two variables will be collected:

Patient's Occupational Industry: The occupational industry associated with the patient's work environment.

Patient's Occupation: The occupation of the patient.

Primary E-code: E-code used to describe the mechanism (or external factor) that caused the injury event.

Autocalculates: Trauma Type & Intentionality

Location E-code: E-code used to describe the place/site/location of the injury event (E 849.X).

Additional E-code: Additional E-code used to describe, for example, a mass casualty event, or other external cause.

Incident Location Zip Code: The ZIP code of the incident location.

If the Incident Location Zip Code is "Not Applicable," "Not Recorded," or "Not Known," the following three variables will be collected to generate a FIPS Code:

Incident County: The county or parish where the patient was found or to which the unit responded (or best approximation).

Incident City: The city or township where the patient was found or to which the unit responded (or best approximation).

Protective Devices: Protective devices (safety equipment) in use or worn by the patient at the time of the injury.

If "Child Restraint" is present, complete variable "Child Specific Restraint."

Child Specific Restraint: Protective child restraint devices used by patient at the time of injury.

If "Protective Devices" include "Airbag" complete variable "Airbag Deployment."

Airbag Deployment: Indication of an airbag deployment during a motor vehicle crash.

Pre-hospital Information

EMS Dispatch Date: The date the unit *transporting to your hospital* was notified by dispatch.

Autocalculates: Total EMS Time

EMS Dispatch Time: The time the unit *transporting to your hospital* was notified by dispatch.

Autocalculates: Total EMS Time

EMS Unit Arrival on Scene/Transferring Facility Date: The date the unit *transporting to your hospital* arrived on the scene.

Autocalculates: Total EMS Response Time and Total EMS Scene Time

EMS Unit Arrival on Scene/Transferring Facility Time: The time the unit *transporting to your hospital* arrived on the scene (the time the vehicle stopped moving).

Autocalculates: Total EMS Response Time and Total EMS Scene Time

EMS Unit Scene/Transferring Facility Departure Date: The date the unit *transporting to your hospital* left the scene.

Autocalculates: Total EMS Scene Time

EMS Unit Scene/transferring Facility Departure Time: The time the unit *transporting to your hospital* left the scene (the time the vehicle started moving).

Autocalculates: Total EMS Scene Time

Transport Mode: The mode of transport delivering the patient to your hospital.

Other Transport Mode: All other modes of transport used during patient care event, except the mode delivering the patient to the hospital.

Initial Field Systolic Blood Pressure: First recorded systolic blood pressure in the pre-hospital setting.

Autocalculates: Revised Trauma Score – EMS (adult & pediatric)

Initial Field Pulse Rate: First recorded pulse in the pre-hospital setting (palpated or auscultated, expressed as a number per minute).

Initial Field Respiratory Rate: First recorded respiratory rate in the pre-hospital setting (expressed as a number per minute).

Autocalculates: Revised Trauma Score – EMS (adult and pediatric)

Initial Field Oxygen Saturation: First recorded oxygen saturation in the pre-hospital setting (expressed as a percentage).

Initial Field GCS – Eye: First recorded Glasgow Coma Score (Eye) in the pre-hospital setting.

Autocalculates: Overall GCS - EMS Score (adult and pediatric)

Initial Field GCS – Verbal: First recorded Glasgow Coma Score (Verbal) in the pre-hospital setting.

Autocalculates: Overall GCS – EMS Score (adult and pediatric)

Initial Field GCS – Motor: First recorded Glasgow Coma Score (Motor) in the pre-hospital setting.

Autocalculates: Overall GCS – EMS Score (adult and pediatric)

Initial Field GCS – Total: First recorded Glasgow Coma Score (total) in the Pre-hospital setting.

Utilize only if total score is available without component scores.

Autocalculates: Revised Trauma Score - EMS (adult and pediatric)

Inter-Facility Transfer: Was the patient transferred to your facility from another acute care facility?

Emergency Department Information

ED/Hospital Arrival Date: The date the patient arrived to the ED/Hospital.

Autocalculates: Total EMS Time and Total Length of Hospital Stay

ED/Hospital Arrival Time: The time the patient arrived to the ED/Hospital.

Autocalculates: Total EMS Time and Total Length of Hospital Stay

Initial ED/Hospital Systolic Blood Pressure: First recorded systolic blood pressure in the ED/hospital.

Autocalculates: Revised Trauma Score - ED (adult and pediatric)

Initial ED/Hospital Pulse Rate: First recorded pulse in the ED/hospital (palpated or auscultated, expressed as a number per minute).

Initial ED/Hospital Temperature: First recorded temperature (in degrees Celsius/centigrade) in the ED/hospital.

Initial ED/Hospital Respiratory Rate: First recorded respiratory rate in the ED/hospital (expressed as a number per minute).

Autocalculates: Revised Trauma Score - ED (adult and pediatric)

> If a value is provided for "Initial ED/Hospital Respiratory Rate," then complete "Initial ED/Hospital Respiratory Assistance."

Initial ED/Hospital Respiratory Assistance: Determination of respiratory assistance associated with the initial ED/hospital respiratory rate.

Initial ED/Hospital Oxygen Saturation: First recorded oxygen saturation in the ED/hospital (expressed as a percentage).

If available, complete additional field: "Initial ED/Hospital Supplemental Oxygen":

Initial ED/Hospital Supplemental Oxygen: Determination of the presence of supplemental oxygen during assessment of initial ED/hospital oxygen saturation level.

Initial ED/Hospital GCS – Eye: First recorded Glasgow Coma Score (Eye) in the ED/hospital.

Autocalculates: Overall GCS - ED (adult and pediatric)

Initial ED/Hospital GCS – Verbal: First recorded Glasgow Coma Score (Verbal) in the ED/hospital.

Autocalculates: Overall GCS - ED (adult and pediatric)

Initial ED GCS/Hospital – Motor: First recorded Glasgow Coma Score (Motor) in the ED/hospital.

Autocalculates: Overall GCS - ED (adult and pediatric)

Initial ED/Hospital GCS – Total: First recorded Glasgow Coma Score (total) in the ED/hospital.

- Utilize only if total score is available without component scores.
- Autocalculates: Revised Trauma Score - ED (adult and pediatric)

Initial ED/Hospital GCS Assessment Qualifiers: Documentation of factors potentially affecting the first assessment of GCS upon arrival in the ED/hospital.

Alcohol Use Indicator: Use of alcohol by the patient.

ED Discharge Disposition: The disposition of the patient at the time of discharge from the ED.

- If the ED Discharge Disposition is recorded as "Died", the field below documents under what circumstances the death occurred:

ED Death: The type of death incurred while the patient was in the ED.

ED Discharge Date: The date the patient was discharged from the ED.

Autocalculates: Total ED Time

ED Discharge Time: The time the patient was discharged from the ED.

Autocalculates: Total ED Time

Hospital Procedure Information

Hospital Procedures: Operative or essential procedures conducted during hospital stay.

Hospital Procedure Start Date: The date operative and essential procedures were performed.

Hospital Procedure Start Time: The time operative and essential procedures were performed.

Diagnosis Information

Comorbid Conditions: Pre-existing comorbid factors present prior to patient arrival at the ED/hospital.

Injury Diagnosis: Diagnoses related to all identified injuries.

Autocalculates: Abbreviated Injury Score (six body regions), Injury Severity Score and Functional Capacity Index.

Injury Severity Information

AIS Predot Code: The Abbreviated Injury Scale (AIS) predot codes that reflect the patient's injuries.

AIS Severity: The Abbreviated Injury Scale (AIS) severity codes that reflect the patient's injuries.

ISS Body Region: The Injury Severity Score (ISS) body region codes that reflect the patient's injuries.

AIS Version: The software (and version) used to calculate Abbreviated Injury Scale (AIS) severity codes.

Locally Calculated ISS: The Injury Severity Score (ISS) that reflects the patient's injuries.

Outcome Information

Total ICU Length of Stay: The total number of patient days in any ICU (including all episodes).

Total Ventilator Days: The total number of patient days spent on a mechanical ventilator (including all episodes)

Hospital Discharge Date: The date the patient was discharged from the hospital.

Autocalculates: Total Length of Hospital Stay

Hospital Discharge Time: The time the patient was discharged from the hospital.

Autocalculates: Total Length of Hospital Stay

Hospital Discharge Disposition: The disposition of the patient when discharged from the hospital.

Financial Information

Primary Method of Payment: Primary source of payment for hospital care.

Quality Assurance Information

Hospital Complications: Any medical complication that occurred during the patient's stay at your hospital

Appendix 5~~3~~: Data Elements used to Link Pre-Hospital Data with Trauma Registry Data

Introduction to Data Linkage

Variables contained within the California/National Trauma Registry (C/NTR) were defined specifically to compliment variables contained within the National Highway Traffic Safety Administration (NHTSA) V 2.2.5 dataset. The NHTSA V 2.2.5 dataset is a standardized collection of variables designed to characterize the pre-hospital environment and the patient care provided by Emergency Medical Services (EMS) providers prior to the patient arriving at the hospital. Variables that are common to both datasets are defined similarly, allowing data to be shared between the two datasets. The advantage to trauma registries is that, given the appropriate hardware infrastructure and software translation table, 36% of the total variables contained in the C/NTR can be automatically completed (auto-populated) in the trauma registry by information transmitted electronically from a NHTSA V 2.2.5 compliant EMS record. The advantage to EMS registries is that patient outcome information available in hospital records can be "back-populated" into an EMS registry to provide benchmarks for quality and performance indicators.

The purpose of the software translation table is to ensure that information contained in the NHTSA V 2.2 database is correctly translated and interpreted by the C/NTR database. This translation table is available and may be acquired by contacting the American College of Surgeons (www.ntdb.org).

The purpose of this appendix is to identify variables defined in the NHTSA V 2.2 or the NTR datasets (or both) that may be used to "link" an EMS patient care record with a trauma registry record describing the same patient. There are several methods that may be employed to ensure that data correctly "links" a patient in the EMS record to the same patient in a trauma registry. A software product may "track" patients from pre-hospital care through the hospital stay using a common unique patient identifier. Another approach utilizes demographic and patient information collected in the EMS registry and trauma registry to "probabilistically" or "deterministically" link the right patient records together. Deterministic and probabilistic linkage are established methods that utilize variables common in both datasets to determine if two different records (one EMS record and one trauma record) are associated with the same patient and health care event.[1-3]

The variables defined in this appendix have, in the past, proven highly reliable and accurate at identify records associated with the same patient in different registries.[4] To successfully utilize a probabilistic (or deterministic) linkage process it is not necessary that common demographic variables be defined exactly as listed here (i.e., exact XSDs) or that these specific variables be utilized. These variables serve as an example of how identified variables may be used to correctly link patient records together. It would be advisable to contact a statistician when constructing an algorithm for linking patient records within the same database or across different databases.

References:

1. Newgard CD. Validation of probabilistic linkage to match de-identified ambulance records to a state trauma registry. *Acad Emerg Med*. 2006;13:69-75.
2. Clark DE. Practical introduction to record linkage for injury research. *Inj Prev*. 2004;10:186-91.
3. Clark DE, Hahn DR. Comparison of probabilistic and deterministic record linkage in the development of a statewide trauma registry. *Proc Annu Symp Comput Appl Med Care*. 1995:397-401.
4. Cook LJ, Olson LM, Dean JM. Probabilistic record linkage: relationships between file sizes, identifiers and match weights. *Methods Inf Med*. 2001;40:196-203.

LAST NAME (CA_08)

Data Format [text] ***California/National Minimum Element***

Definition: The patient's last (family) name

Field Values

- Relevant value for data element

Uses

- Value used to probabilistically link to EMS record, Office of Statewide Health Planning and Development (OSHPD) emergency department and hospital discharge data and Vital Statistics.

Data Source Hierarchy

1. Billing Sheet / Medical Records Coding Summary Sheet
2. Hospital Admission Form

References to other Databases

NHTSA (NEMSIS) V 2.2.5 - E06_01

FIRST NAME (CA_09)

Data Format [text] ***California/National Minimum Element***

Definition: The patient's first (given) name

Field Values

- Relevant value for data element

Uses

- Value used to probabilistically link to EMS record, Office of Statewide Health Planning and Development (OSHPD) emergency department and hospital discharge data and Vital Statistics.

Data Source Hierarchy

1. Billing Sheet / Medical Records Coding Summary Sheet
2. Hospital Admission Form

References to other databases

NHTSA (NEMSIS) V 2.2.5 - E06_02

DL_03

PATIENT'S HOME ZIP CODE

Data Format [text] ***California/National Minimum Element***

Definition

The patient's home ZIP code of primary residence.

Field Values

- Relevant value for data element

Additional Information

- Can be stored as a 5 or 9 digit code (XXXXX-XXXX).
- May require adherence to HIPAA regulations.

Uses

- Value used to probabilistically link to EMS record, Office of Statewide Health Planning and Development (OSHPD) emergency department and hospital discharge data and Vital Statistics.

References to other databases

NHTSA (NEMSIS).V 2.2 - E06_08

SOCIAL SECURITY NUMBER (CA_10)

Data Format [number] ***California/National Minimum Element***

Definition: The last 5 digits of the patient's social security number.

Field Values

- Relevant value for data element

Data Source Hierarchy

1. Billing Sheet / Medical Records Coding Summary Sheet
2. Hospital Admission Form

Uses

- Value used to probabilistically link to EMS record, Office of Statewide Health Planning and Development (OSHPD) emergency department and hospital discharge data and Vital Statistics.

References to other databases

NHTSA (NEMSIS) V 2.2 -E06_10

SEX

Data Format [combo] single-choice ***California/National Minimum Element***

Definition

The patient's sex.

Field Values

1 Male

2 Female

Uses

3. Value used to probabilistically link to EMS record, Office of Statewide Health Planning and Development (OSHPD) emergency department and hospital discharge data and Vital Statistics.

References to other databases

NHTSA (NEMSIS) V 2.2 - E06_11

RACE

Data Format [combo] single-choice — ***California/National Minimum Element***

Definition

The patient's race.

Field Values

1 Asian

2 Native Hawaiian or Other Pacific Islander

3 Other Race

4 American Indian

5 Black or African American

6 White

Uses

4. Value used to probabilistically link to EMS record, Office of Statewide Health Planning and Development (OSHPD) emergency department and hospital discharge data and Vital Statistics.

References to other databases

NHTSA (NEMSIS) V 2.2 - E06_12

ETHNICITY

Data Format [combo] single-choice ***California/National Minimum Element***

Definition

The patient's ethnicity.

Field Values

1 Hispanic or Latino

2 Not Hispanic or Latino

Uses

5. Value used to probabilistically link to EMS record, Office of Statewide Health Planning and Development (OSHPD) emergency department and hospital discharge data and Vital Statistics.

References to other databases

NHTSA (NEMSIS) V 2.2 - E06_13

AGE

Data Format [number] ***California/National Minimum Element***

Definition

The patient's age at the time of injury (best approximation)

Field Values

- Relevant value for data element

Uses

6. Value used to probabilistically link to EMS record, Office of Statewide Health Planning and Development (OSHPD) emergency department and hospital discharge data and Vital Statistics.

References to other databases

NHTSA (NEMSIS) V 2.2 - E06_14

AGE UNITS

Data Format [combo] single-choice ***California/National Minimum Element***

Definition

The units used to document the patient's age (Years, Months, Days, Hours)

Field Values

1 Hours	3 Months
2 Days	4 Years

Uses

7. Value used to probabilistically link to EMS record, Office of Statewide Health Planning and Development (OSHPD) emergency department and hospital discharge data and Vital Statistics.

References to other databases

NHTSA (NEMSIS) V 2.2 - E06_15

DATE OF BIRTH

Data Format [date] ***California/National Minimum Element***

Definition

The patient's date of birth.

Field Values

- Relevant value for data element

Uses

8. Value used to probabilistically link to EMS record, Office of Statewide Health Planning and Development (OSHPD) emergency department and hospital discharge data and Vital Statistics.

References to other databases

NHTSA (NEMSIS) V 2.2 - E06_16

~~Appendix 4: Edit Checks for the National Trauma Registry Data Element~~

Demographic Information

Patient's Home Zip Code

Rule ID	Level	Message
001	Error	Invalid value
002	Error	Blank, required field
003	Warning	Not Applicable, complete variable: *Alternate Home Residence*
004	Warning	Not Recorded, complete variables: *Patient's Home Country*, *Patient's Home State*, *Patient's Home County* and *Patient's Home City*
005	Warning	Not Known, complete variables: *Patient's Home Country*, *Patient's Home State*, *Patient's Home County* and *Patient's Home City*

Patient's Home Country

Rule ID	Level	Message
011	Error	Invalid value
012	Warning	Blank, required to complete variables: *Patient's Home Zip Code* or *Alternate Home Residence*

Patient's Home State

Rule ID	Level	Message

021	Error	Invalid value
022	Warning	Blank, required to complete variables: *Patient's Home Zip Code* or *Alternate Home Residence*

Patient's Home County

Rule ID	Level	Message
031	Error	Invalid value
032	Warning	Blank, required to complete variables: *Patient's Home Zip Code* or *Alternate Home Residence*

Patient's Home City

Rule ID	Level	Message
041	Error	Invalid value
042	Warning	Blank, required to complete variables: *Patient's Home Zip Code* or *Alternate Home Residence*

Alternate Home Residence

Rule ID	Level	Message
051	Error	Invalid value
052	Warning	Blank, required to complete variables: *Patient's Home Zip Code* or (*Patient's Home Country*, *Patient's Home State*,

		Patient's Home County and *Patient's Home City*)

Date of Birth

Rule ID	Level	Message
061	Error	Invalid value
062	Error	Date out of range
063	Error	Blank, required field – complete variables: *Age* and *Age Units* if less than 24 hours
064	Warning	Not Recorded, complete variables: *Age* and *Age Units*
066	Warning	Not Known, complete variables: *Age* and *Age Units*
066	Error	*Date of Birth* cannot be later than *EMS Dispatch Date*
067	Error	*Date of Birth* cannot be later than *EMS Unit Arrival on Scene Date*
068	Error	*Date of Birth* cannot be later than *EMS Unit Scene Departure Date*
	Error	Date of birth cannot be later than *ED/Hospital Arrival Date*
069	Error	*Date of Birth* cannot be later than *ED Discharge Date*
070	Error	*Date of Birth* cannot be later than *Hospital Discharge Date*

Age

Rule ID	Level	Message

081	Error	Invalid value
082	Warning	Blank, required to complete variable: *Date of Birth*

Age Units

Rule ID	Level	Message
091	Error	Invalid value
092	Warning	Blank, required to complete variable: *Date of Birth*

Race

Rule ID	Level	Message
101	Error	Invalid value
102	Error	Blank, required field

Ethnicity

Rule ID	Level	Message
111	Error	Invalid value
112	Error	Blank, required field

Sex

Rule ID	Level	Message

121	Error	Invalid value
122	Error	Blank, required field

Injury Information

Injury Incident Date

Rule ID	Level	Message
131	Error	Invalid Value
132	Error	Date out of range
133	Error	Blank, required field
134	Error	*Injury Incident Date* cannot be earlier than *Date of Birth*
135	Error	*Injury Incident Date* cannot be later than *EMS Dispatch Date*
136	Error	*Injury Incident Date* cannot be later than *EMS Unit Arrival on Scene Date*
137	Error	*Injury Incident Date* cannot be later than *EMS Unit Scene Departure Date*
138	Error	*Injury Incident Date* cannot be later than *ED/Hospital Arrival Date*
139	Error	*Injury Incident Date* cannot be later than *ED Discharge Date*
140	Error	*Injury Incident Date* cannot be later than *Hospital Discharge Date*

Injury Incident Time

Rule ID	Level	Message
151	Error	Invalid value
152	Error	Time out of range
153	Error	Bank, required field
154	Error	Since *Injury Incident Date* and *EMS Dispatch Date* are the same, the *Injury Incident Time* cannot be later than the *EMS Dispatch Time*
155	Error	Since *Injury Incident Date* and *EMS Unit Arrival on Scene Date* are the same, the *Injury Incident Time* cannot be later than the *EMS Unit Arrival on Scene Time*
156	Error	Since *Injury Incident Date* and *EMS Unit Scene Departure Date* are the same, the *Injury Incident Time* cannot be later than the *EMS Unit Scene Departure Time*
157	Error	Since *Injury Incident Date* and *ED/Hospital Arrival Date* are the same, the *Injury Incident Time* cannot be later than the *ED/Hospital Arrival Time*
158	Error	Since *Injury Incident Date* and *ED Discharge Date* are the same, the *Injury Incident Time* cannot be later than the *ED Discharge Time*
159	Error	Since *Injury Incident Date* and *Hospital Discharge Date* are the same, the *Injury Incident Time* cannot be later than the

		Hospital Discharge Time

Work-Related

Rule ID	Level	Message
171	Error	Invalid value
172	Error	Blank, required field

Patient's Occupational Industry

Rule ID	Level	Message
181	Error	Invalid value
182	Warning	Blank, required to complete variable: *Work-Related*

Patient's Occupation

Rule ID	Level	Message
191	Error	Invalid value
192	Warning	Blank, required to complete variable: *Work-Related*

Primary E-Code

Rule ID	Level	Message
201	Error	Invalid, out of range
202	Error	Blank, at least one ICD-9-CM trauma code must be entered

Location E-Code

Rule ID	Level	Message
211	Error	Invalid, out of range

Additional E-Code

Rule ID	Level	Message
221	Error	Invalid, out of range

Incident Location Zip Code

Rule ID	Level	Message
231	Error	Invalid value
232	Error	Blank, required field
233	Warning	Not Recorded, complete variables: *Incident State*, *Incident County* and Incident City
234	Warning	Not Known, complete variables: *Incident State*, *Incident County* and *Incident City*
235	Warning	Not Applicable, complete variables: *Incident State*, *Incident County* and Incident City

Incident State

Rule ID	Level	Message
241	Error	Invalid value
242	Warning	Blank, required to complete variable: *Incident Location Zip*

		Code

Incident County

Rule ID	Level	Message
251	Error	Invalid value
252	Warning	Blank, required to complete variable: *Incident Location Zip Code*

Incident City

Rule ID	Level	Message
261	Error	Invalid value
262	Warning	Blank, required to complete variable: *Incident Location Zip Code*

Protective Devices

Rule ID	Level	Message
271	Error	Invalid value
272	Error	Blank, required field

Child Specific Restraint

Rule ID	Level	Message
281	Error	Invalid value

Airbag Deployment

Rule ID	Level	Message
291	Error	Invalid value

Pre-hospital Information

EMS Dispatch Date

Rule ID	Level	Message
301	Error	Invalid value
302	Error	Date out of range
303	Error	*EMS Dispatch Date* cannot be earlier than *Date of Birth*
304	Error	*EMS Dispatch Date* cannot be later than *EMS Unit Arrival on Scene Date*
305	Error	*EMS Dispatch Date* cannot be later than *EMS Unit Scene Departure Date*
306	Error	*EMS Dispatch Date* cannot be later than *ED/Hospital Arrival Date*
307	Error	*EMS Dispatch Date* cannot be later than *ED Discharge Date*
308	Error	*EMS Dispatch Date* cannot be later than *Hospital Discharge Date*

EMS Dispatch Time

Rule ID	Level	Message
321	Error	Invalid value
322	Error	Time out of range
323	Error	Since *EMS Dispatch Date* and *EMS Unit Arrival on Scene Date* are the same, the *EMS Dispatch Time* cannot be later than the *EMS Unit Arrival on Scene Time*
324	Error	Since *EMS Dispatch Date* and *EMS Unit Scene Departure Date* are the same, the *EMS Dispatch Time* cannot be later than the *EMS Unit Scene Departure Time*
325	Error	Since *EMS Dispatch Date* and *ED/Hospital Arrival Date* are the same, the *EMS Dispatch Time* cannot be later than the *ED/Hospital Arrival Time*
326	Error	Since *EMS Dispatch Date* and *ED Discharge Date* are the same, the *EMS Dispatch Time* cannot be later than the *ED Discharge Time*
327	Error	Since *EMS Dispatch Date* and *Hospital Discharge Date* are the same, the *EMS Dispatch Time* cannot be later than the *Hospital Discharge Time*

EMS Unit Arrival on Scene Date

Rule ID	Level	Message
341	Error	Invalid value
342	Error	Date out of range
343	Error	*EMS Unit Arrival on Scene Date* cannot be earlier than *Date of Birth*
344	Error	*EMS Unit Arrival on Scene Date* cannot be earlier than *EMS Dispatch Date*
345	Error	*EMS Unit Arrival on Scene Date* cannot be later than *EMS Unit Scene Departure Date*
346	Error	*EMS Unit Arrival on Scene Date* cannot be later than *ED/Hospital Arrival Date*
347	Error	*EMS Unit Arrival on Scene Date* cannot be later than *ED Discharge Date*
349	Error	*EMS Unit Arrival on Scene Date* and cannot be later than *Hospital Discharge Date*

EMS Unit Arrival on Scene Time

Rule ID	Level	Message
361	Error	Invalid value
362	Error	Time out of range

363	Error	Since *EMS Unit Arrival on Scene Date* and *EMS Dispatch Date* are the same, the *EMS Unit Arrival on Scene Time* cannot be earlier than the *EMS Dispatch Time*
364	Error	Since *EMS Unit Arrival on Scene Date* and *EMS Unit Scene Departure Date are* the same, the *EMS Unit Arrival on Scene Time* cannot be later than the *EMS Unit Scene Departure Time*
365	Error	Since *EMS Unit Arrival on Scene Date* and *ED/Hospital Arrival Date* are the same, the *EMS Unit Arrival on Scene Time* cannot be later than the *ED/Hospital Arrival Time*
366	Error	Since *EMS Unit Arrival on Scene Date* and *ED Discharge Date* are the same, the *EMS Unit Arrival on Scene Time* cannot be later than the *ED Discharge Time*
367	Error	Since *EMS Unit Arrival on Scene Date* and *Hospital Discharge Date* are the same, the *EMS Unit Arrival on Scene Time* cannot be later than the *Hospital Discharge Time*

EMS Unit Scene Departure Date

Rule ID	Level	Message
381	Error	Invalid value
382	Error	Date out of range
383	Error	*EMS Unit Scene Departure Date* cannot be earlier than *Date*

		of Birth
384	Error	*EMS Unit Scene Departure Date* cannot be earlier than *EMS Dispatch Date*
385	Error	*EMS Unit Scene Departure Date* cannot be earlier than *EMS Unit Arrival on Scene Date*
386	Error	*EMS Unit Scene Departure Date* cannot be later than *ED/Hospital Arrival Date*
387	Error	*EMS Unit Scene Departure Date* cannot be later than *ED Discharge Date*
388	Error	*EMS Unit Scene Departure Date* cannot be later than *Hospital Discharge Date*

EMS Unit Scene Departure Time

Rule ID	Level	Message
401	Error	Invalid value
402	Error	Time out of range
403	Error	Since *EMS Unit Scene Departure Date* and *EMS Dispatch Date* are the same, the *EMS Unit Scene Departure Time* cannot be earlier than the *EMS Dispatch Time*
404	Error	Since *EMS Unit Scene Departure Date* and *EMS Unit Arrival on Scene Date* are the same, the *EMS Unit Scene Departure Time* cannot be earlier than the *EMS Unit Arrival on Scene*

		Time
405	Error	Since *EMS Unit Scene Departure Date* and *ED/Hospital Arrival Date* are the same, the *EMS Unit Scene Departure Time* cannot be later than the *ED/Hospital Arrival Time*
406	Error	Since *EMS Unit Scene Departure Date* and *ED Discharge Date* are the same, the *EMS Unit Scene Departure Time* cannot be later than the *ED Discharge Time*
407	Error	Since *EMS Unit Scene Departure Date* and *Hospital Discharge Date* are the same, the *EMS Unit Scene Departure Time* cannot be later than the *Hospital Discharge Time*

Transport Mode

Rule ID	Level	Message
421	Error	Invalid value
422	Error	Blank, required field
423	Error	Since EMS response times are provided, *Transport Mode* cannot be Private/Public Vehicle/Walk-in

Other Transport Mode

Rule ID	Level	Message
431	Error	Invalid value

Initial Field Systolic Blood Pressure

Rule ID	Level	Message
441	Error	Invalid, out of range
442	Error	Blank, required field

Initial Field Pulse Rate

Rule ID	Level	Message
451	Error	Invalid, out of range
452	Error	Blank, required field

Initial Field Respiratory Rate

Rule ID	Level	Message
461	Error	Invalid, out of range
462	Error	Blank, required field

Initial Field Oxygen Saturation

Rule ID	Level	Message
471	Error	Invalid, out or range
472	Error	Blank, required field

Initial Field GCS – Eye

Rule ID	Level	Message
481	Error	Invalid, out or range

482	Warning	Blank, required to complete variable: *Initial Field GCS – Total*

Initial Field GCS – Verbal

Rule ID	Level	Message
491	Error	Invalid, out or range
492	Warning	Blank, required to complete variable: *Initial Field GCS – Total*

Initial Field GCS – Motor

Rule ID	Level	Message
501	Error	Invalid, out or range
502	Warning	Blank, required to complete variable: *Initial Field GCS – Total*

Initial Field GCS – Total

Rule ID	Level	Message
511	Error	Invalid, out or range
482	Warning	Blank, required to complete variables: *Initial Field GCS – Eye, Initial Field GCS – Verbal, Initial Field GCS – Motor*

Inter-Facility Transfer

Rule ID	Level	Message
521	Error	Blank, required field

Emergency Department Information

ED/Hospital Arrival Date

Rule ID	Level	Message
531	Error	Invalid value
532	Error	Date out of range
533	Error	Blank, required field
534	Error	*ED/Hospital Arrival Date* cannot be earlier than *EMS Dispatch Date*
535	Error	*ED/Hospital Arrival Date* cannot be earlier than *EMS Unit Arrival on Scene Date*
536	Error	*ED/Hospital Arrival Date* cannot be earlier than *EMS Unit Scene Departure Date*
537	Error	*ED/Hospital Arrival Date* cannot be later than *ED Discharge Date*
538	Error	*ED/Hospital Arrival Date* cannot be later than *Hospital Discharge Date*

ED/Hospital Arrival Time

Rule ID	Level	Message
541	Error	Invalid value
542	Error	Time out of range

543	Error	Blank, required field
544	Error	Since *ED/Hospital Arrival Date* and *EMS Dispatch Date* are the same, the *ED/Hospital Arrival Time* cannot be earlier than the *EMS Dispatch Time*
545	Error	Since *ED/Hospital Arrival Date* and *EMS Unit Arrival on Scene Date* are the same, the *ED/Hospital Arrival Time* cannot be earlier than the *EMS Unit Arrival on Scene Time*
546	Error	Since *ED/Hospital Arrival Date* and *EMS Unit Scene Departure Date* are the same, the *ED/Hospital Arrival Time* cannot be earlier than the *EMS Unit Scene Departure Time*
547	Error	Since *ED/Hospital Arrival Date* and *ED Discharge Date* are the same, the *ED/Hospital Arrival Time* cannot be later than the *ED Discharge Time*
548	Error	Since *ED/Hospital Arrival Date* and *Hospital Discharge Date* are the same, the *ED/Hospital Arrival Time* cannot be later than the *Hospital Discharge Time*

Initial ED/Hospital Systolic Blood Pressure

Rule ID	Level	Message
561	Error	Invalid, out of range
562	Error	Blank, required field

Initial ED/Hospital Pulse Rate

Rule ID	Level	Message
571	Error	Invalid value
572	Error	Blank, required field

Initial ED/Hospital Temperature

Rule ID	Level	Message
581	Error	Invalid, out of range
582	Error	Blank, required field

Initial ED/Hospital Respiratory Rate

Rule ID	Level	Message
591	Error	Invalid, out of range
592	Error	Blank, required field

Initial ED/Hospital Respiratory Assistance

Rule ID	Level	Message
601	Error	Invalid value
602	Error	Blank, required field

Initial ED/Hospital Oxygen Saturation

Rule ID	Level	Message
611	Error	Invalid value
612	Error	Blank, required field

Initial ED/Hospital Supplemental Oxygen

Rule ID	Level	Message
621	Error	Invalid value
622	Error	Blank, required field

Initial ED/Hospital GCS – Eye

Rule ID	Level	Message
631	Error	Invalid, out or range
632	Warning	Blank, required to complete variable: *Initial ED/Hospital GCS – Total*

Initial ED/Hospital GCS – Verbal

Rule ID	Level	Message

641	Error	Invalid, out or range
642	Warning	Blank, required to complete variable: *Initial ED/Hospital GCS – Total*

Initial ED/Hospital GCS – Motor

Rule ID	Level	Message
651	Error	Invalid, out or range
652	Warning	Blank, required to complete variable: *Initial ED/Hospital GCS – Total*

Initial ED/Hospital GCS – Total

Rule ID	Level	Message
661	Error	Invalid, out or range
662	Warning	Blank, required to complete variable: *Initial ED/Hospital GCS – Eye, Initial ED/Hospital GCS – Verbal, Initial ED/Hospital GCS – Motor*

Initial ED/Hospital GCS Assessment Qualifiers

Rule ID	Level	Message
671	Error	Invalid value
672	Error	Blank, required field

Alcohol Use Indicator

Rule ID	Level	Message

681	Error	Invalid value
682	Error	Blank, required field

Drug Use Indicator

Rule ID	Level	Message
691	Error	Invalid value
692	Error	Blank, required field

ED Discharge Disposition

Rule ID	Level	Message
701	Error	Invalid value
702	Error	Blank, required field

ED Death

Rule ID	Level	Message
711	Error	Invalid value
712	Error	Blank, required field

ED Discharge Date

Rule ID	Level	Message
721	Error	Invalid value
722	Error	Date out of range

723	Error	Blank, required field
724	Error	*ED Discharge Date* cannot be earlier than *EMS Dispatch Date*
725	Error	*ED Discharge Date* cannot be earlier than *EMS Unit Arrival on Scene Date*
726	Error	*ED Discharge Date* cannot be earlier than *EMS Unit Scene Departure Date*
727	Error	*ED Discharge Date* cannot be earlier than *ED/Hospital Arrival Date*
728	Error	*ED Discharge Date* cannot be later than *Hospital Discharge Date*

ED Discharge Time

Rule ID	Level	Message
741	Error	Invalid value
742	Error	Time out of range
743	Error	Blank, required field
744	Error	Since *ED Discharge Date* and *EMS Dispatch Date* are the same, the *ED Discharge Time* cannot be earlier than the *EMS Dispatch Time*
745	Error	Since *ED Discharge Date* and *EMS Unit Arrival on Scene Date* are the same, the *ED Discharge Time* cannot be earlier

		than the *EMS Unit Arrival on Scene Time*
746	Error	Since *ED Discharge Date* and *EMS Unit Scene Departure Date* are the same, the *ED Discharge Time* cannot be earlier than the *EMS Unit Scene Departure Time*
747	Error	Since *ED Discharge Date* and *ED/Hospital Arrival Date* are the same, the *ED Discharge Time* cannot be earlier than the *ED/Hospital Arrival Time*
748	Error	Since *ED Discharge Date* and *Hospital Discharge Date* are the same, the *ED Discharge Time* cannot be later than the *Hospital Discharge Time*

Hospital Procedure Information

Hospital Procedures

Rule ID	Level	Message
761	Error	Invalid value

Hospital Procedure Start Date

Rule ID	Level	Message
771	Error	Invalid value
772	Error	Date out of range
773	Error	*Hospital Procedure Start Date* cannot be earlier than *EMS Dispatch Date*

774	Error	*Hospital Procedure Start Date* cannot be earlier than *EMS Unit Arrival on Scene Date*
775	Error	*Hospital Procedure Start Date* cannot be earlier than *EMS Unit Scene Departure Date*
776	Error	*Hospital Procedure Start Date* cannot be earlier than *ED/Hospital Arrival Date*
777	Error	*Hospital Procedure Start Date* cannot be later than *Hospital Discharge Date*

Hospital Procedure Start Time

Rule ID	Level	Message
791	Error	Invalid value
792	Error	Time out of range
793	Error	Since *Hospital Procedure Start Date* and *EMS Dispatch Date* are the same, the *Hospital Procedure Start Time* cannot be earlier than the *EMS Dispatch Time*
794	Error	Since *Hospital Procedure Start Date* and *EMS Unit Arrival on Scene Date* are the same, the *Hospital Procedure Start Time* cannot be earlier than the *EMS Unit Arrival on Scene Time*
795	Error	Since *Hospital Procedure Start Date* and *EMS Unit Scene Departure Date* are the same, the *Hospital Procedure Start Time* cannot be earlier than the *EMS Unit Scene Departure*

		Time
796	Error	Since *Hospital Procedure Start Date* and *ED/Hospital Arrival Date* are the same, the *Hospital Procedure Start Time* cannot be earlier than the *ED/Hospital Arrival Time*
797	Error	Since *Hospital Procedure Start Date* and *Hospital Discharge Date* are the same, the *Hospital Procedure Start Time* cannot be later than the *Hospital Discharge Time*

Diagnoses Information

Co-Morbid Conditions

Rule ID	Level	Message
811	Error	Invalid value
812	Error	Blank, required field

Injury Diagnoses

Rule ID	Level	Message
821	Error	Invalid value
822	Error	Blank, required field

Outcome Information

Total ICU Length of Stay

Rule ID	Level	Message

831	Error	Invalid value
832	Error	Blank, required field
833	Error	*Total ICU Length of Stay* should not be greater than the difference between *ED/Hospital Arrival Date* and *Hospital Discharge Date*

Total Ventilator Days

Rule ID	Level	Message
841	Error	Invalid value
842	Error	Blank, required field
843	Error	*Total Ventilator Days* should not be greater than the difference between *ED/Hospital Arrival Date* and *Hospital Discharge Date*

Hospital Discharge Date

Rule ID	Level	Message
851	Error	Invalid value
852	Error	Date out of range
853	Error	Blank, required field
854	Error	*Hospital Discharge Date* cannot be earlier than *EMS Dispatch Date*
855	Error	*Hospital Discharge Date* cannot be earlier than *EMS Unit*

		Arrival on Scene Date
856	Error	*Hospital Discharge Date* cannot be earlier than *EMS Unit Scene Departure Date*
857	Error	*Hospital Discharge Date* cannot be earlier than *ED/Hospital Arrival Date*
858	Error	*Hospital Discharge Date* cannot be earlier than *ED Discharge Date*

Hospital Discharge Time

Rule ID	Level	Message
871	Error	Invalid value
872	Error	Time out of range
873	Error	Blank, required field
874	Error	Since *Hospital Discharge Date* and *EMS Dispatch Date* are the same, the *Hospital Discharge Time* cannot be earlier than the *EMS Dispatch Time*
875	Error	Since *Hospital Discharge Date* and *EMS Unit Arrival on Scene Date* are the same, the *Hospital Discharge Time* cannot be earlier than the *EMS Unit Arrival on Scene Time*
876	Error	Since *Hospital Discharge Date* and *EMS Unit Scene Departure Date* are the same, the *Hospital Discharge Time* cannot be earlier than the *EMS Unit Scene Departure Time*

877	Error	Since *Hospital Discharge Date* and *ED/Hospital Arrival Date* are the same, the *Hospital Discharge Time* cannot be earlier than the *ED/Hospital Arrival Time*
878	Error	Since *Hospital Discharge Date* and *ED Discharge Date* are the same, the *Hospital Discharge Time* cannot be earlier than the *ED Discharge Time*

Hospital Discharge Disposition

Rule ID	Level	Message
891	Error	Invalid value
892	Error	Blank, required field

Financial Information

Primary Method of Payment

Rule ID	Level	Message
901	Error	Invalid value
902	Error	Blank, required field

Quality Assurance Information

Hospital Complications

Rule ID	Level	Message
911	Error	Invalid value
912	Error	Blank, required field

~~Appendix 5: National Trauma Registry Data Scheme~~

Data Scheme

Demographic Variables

1. ***Patient's Home Zip Code***: The patient's home ZIP code of primary residence.

   If Patient's Home Zip Code is "Not Recorded," or "Not Known," the following four variables will be collected to generate a FIPS Code:

   a. ***Patient's Home Country***: The patient's home country where he/she resides.

   b. ***Patient's Home State***: The patient's home state (territory, province, or District of Columbia) where the patient resides.

   c. ***Patient's Home County***: The patient's home county (or parish) of residence.

   d. ***Patient's Home City***: The patient's home city (or township, village) of residence.

   If Patient's Home Zip Code is "Not Applicable," the following variable will be collected.

   e. ***Alternate Home Residence***: Documentation of the type of patient without a home Zip Code.

2. ***Date of Birth***: The patient's date of birth.

   If Date of Birth is "Not Recorded," "Not Known," or less than 24 hours, the following two variables will be collected to determine the patient's age:

   a. ***Age***: The patient's age at the time of injury (best approximation).

   b. ***Age Units***: The units used to document the patient's age (Years, Months, Days, Hours).

3. ***Race***: The patient's race.

4. ***Ethnicity***: The patient's ethnicity.

5. ***Sex***: The patient's sex.

Injury Variables

6. ***Injury Incident Date***: The date the injury occurred.

7. ***Injury Incident Time***: The time the injury occurred.

8. ***Work-Related***: Indication of whether the injury occurred during paid employment.

If the injury is determined to be "Work-Related", the following two variables will be collected:

a. ***Patient's Occupational Industry***: The occupational industry associated with the patient's work environment.

b. ***Patient's Occupation***: The occupation of the patient.

9. ***Primary E-code***: E-code used to describe the mechanism (or external factor) that caused the injury event.

Autocalculates: Trauma Type & Intentionality

10. ***Location E-code***: E-code used to describe the place/site/location of the injury event (E 849.X).

11. ***Additional E-code***: Additional E-code used to describe, for example, a mass casualty event, or other external cause.

12. ***Incident Location Zip Code***: The ZIP code of the incident location.

If the Incident Location Zip Code is "Not Applicable," "Not Recorded," or "Not Known," the following three variables will be collected to generate a FIPS Code:

a. ***Incident State***: The state, territory, or province where the patient was found or to which the unit responded (or best approximation).

b. ***Incident County***: The county or parish where the patient was found or to which the unit responded (or best approximation).

c. ***Incident City***: The city or township where the patient was found or to which the unit responded (or best approximation).

13. ***Protective Devices***: Protective devices (safety equipment) in use or worn by the patient at the time of the injury.

If "Child Restraint" is present, complete variable "Child Specific Restraint."

a. ***Child Specific Restraint***: Protective child restraint devices used by patient at the time of injury.

If "Protective Devices" include "Airbag" complete variable "Airbag Deployment."

14. ***Airbag Deployment***: Indication of an airbag deployment during a motor vehicle crash.

Pre-hospital Variables

15. ***EMS Dispatch Date***: The date the unit *transporting to your hospital* was notified by dispatch.

    Autocalculates: Total EMS Time

16. ***EMS Dispatch Time***: The time the unit *transporting to your hospital* was notified by dispatch.

    Autocalculates: Total EMS Time

17. ***EMS Unit Arrival on Scene Date***: The date the unit *transporting to your hospital* arrived on the scene.

    Autocalculates: Total EMS Response Time and Total EMS Scene Time

18. ***EMS Unit Arrival on Scene Time***: The time the unit *transporting to your hospital* arrived on the scene (the time the vehicle stopped moving).

    Autocalculates: Total EMS Response Time and Total EMS Scene Time

19. ***EMS Unit Scene Departure Date***: The date the unit *transporting to your hospital* left the scene.

    Autocalculates: Total EMS Scene Time

20. ***EMS Unit Scene Departure Time***: The time the unit *transporting to your hospital* left the scene (the time the vehicle started moving).

    Autocalculates: Total EMS Scene Time

21. ***Transport Mode***: The mode of transport delivering the patient to your hospital.

22. ***Other Transport Mode***: All other modes of transport used during patient care event, except the mode delivering the patient to the hospital.

23. ***Initial Field Systolic Blood Pressure***: First recorded systolic blood pressure in the pre-hospital setting.

    Autocalculates: Revised Trauma Score – EMS (adult & pediatric)

24. ***Initial Field Pulse Rate***: First recorded pulse in the pre-hospital setting (palpated or auscultated, expressed as a number per minute).

25. ***Initial Field Respiratory Rate***: First recorded respiratory rate in the pre-hospital setting (expressed as a number per minute).

    Autocalculates: Revised Trauma Score – EMS (adult and pediatric)

26. ***Initial Field Oxygen Saturation***: First recorded oxygen saturation in the pre-hospital setting (expressed as a percentage).

27. ***Initial Field GCS – Eye***: First recorded Glasgow Coma Score (Eye) in the pre-hospital setting.

    Autocalculates: Overall GCS - EMS Score (adult and pediatric)

28. ***Initial Field GCS – Verbal***: First recorded Glasgow Coma Score (Verbal) in the pre-hospital setting.

    Autocalculates: Overall GCS – EMS Score (adult and pediatric)

29. ***Initial Field GCS – Motor***: First recorded Glasgow Coma Score (Motor) in the pre-hospital setting.

    Autocalculates: Overall GCS – EMS Score (adult and pediatric)

30. ***Initial Field GCS – Total***: First recorded Glasgow Coma Score (total) in the Pre-hospital setting.

    Utilize only if total score is available without component scores.

    Autocalculates: Revised Trauma Score - EMS (adult and pediatric)

31. ***Inter-Facility Transfer***: Was the patient transferred to your facility from another acute care facility?

Emergency Department Variables

32. ***ED/Hospital Arrival Date***: The date the patient arrived to the ED/Hospital.

    Autocalculates: Total EMS Time and Total Length of Hospital Stay

33. ***ED/Hospital Arrival Time***: The time the patient arrived to the ED/Hospital.

    Autocalculates: Total EMS Time and Total Length of Hospital Stay

34. ***Initial ED/Hospital Systolic Blood Pressure***: First recorded systolic blood pressure in the ED/hospital.

    Autocalculates: Revised Trauma Score - ED (adult and pediatric)

35. ***Initial ED/Hospital Pulse Rate***: First recorded pulse in the ED/hospital (palpated or auscultated, expressed as a number per minute).

36. ***Initial ED/Hospital Temperature***: First recorded temperature (in degrees Celsius/centigrade) in the ED/hospital.

37. ***Initial ED/Hospital Respiratory Rate***: First recorded respiratory rate in the ED/hospital (expressed as a number per minute).

Autocalculates: Revised Trauma Score - ED (adult and pediatric)

If a value is provided for "Initial ED/Hospital Respiratory Rate," then complete "Initial ED/Hospital Respiratory Assistance."

a. ***Initial ED/Hospital Respiratory Assistance***: Determination of respiratory assistance associated with the initial ED/hospital respiratory rate.

38. ***Initial ED/Hospital Oxygen Saturation***: First recorded oxygen saturation in the ED/hospital (expressed as a percentage).

If available, complete additional field: "Initial ED/Hospital Supplemental Oxygen":

a. ***Initial ED/Hospital Supplemental Oxygen***: Determination of the presence of supplemental oxygen during assessment of initial ED/hospital oxygen saturation level.

39. ***Initial ED/Hospital GCS – Eye***: First recorded Glasgow Coma Score (Eye) in the ED/hospital.

Autocalculates: Overall GCS - ED (adult and pediatric)

40. ***Initial ED/Hospital GCS – Verbal***: First recorded Glasgow Coma Score (Verbal) in the ED/hospital.

Autocalculates: Overall GCS - ED (adult and pediatric)

41. ***Initial ED GCS/Hospital – Motor***: First recorded Glasgow Coma Score (Motor) in the ED/hospital.

Autocalculates: Overall GCS - ED (adult and pediatric)

42. ***Initial ED/Hospital GCS – Total***: First recorded Glasgow Coma Score (total) in the ED/hospital.

Utilize only if total score is available without component scores.

Autocalculates: Revised Trauma Score - ED (adult and pediatric)

43. ***Initial ED/Hospital GCS Assessment Qualifiers***: Documentation of factors potentially affecting the first assessment of GCS upon arrival in the ED/hospital.

44. ***Alcohol Use Indicator***: Use of alcohol by the patient.

45. ***Drug Use Indicator***: Use of drugs by the patient.

46. ***ED Discharge Disposition***: The disposition of the patient at the time of discharge from the ED.

If the ED Discharge Disposition is recorded as "Died", the field below documents under what circumstances the death occurred:

a. ***ED Death***: The type of death incurred while the patient was in the ED.

47. ***ED Discharge Date***: The date the patient was discharged from the ED.

Autocalculates: Total ED Time

48. ***ED Discharge Time***: The time the patient was discharged from the ED.

Autocalculates: Total ED Time

Hospital Procedure Variables

49. ***Hospital Procedures***: Operative or essential procedures conducted during hospital stay.

50. ***Hospital Procedure Start Date***: The date operative and essential procedures were performed.

51. ***Hospital Procedure Start Time***: The time operative and essential procedures were performed.

Diagnosis Variables

52. ***Comorbid Conditions***: Pre-existing comorbid factors present prior to patient arrival at the ED/hospital.

53. ***Injury Diagnosis***: Diagnoses related to all identified injuries.

Autocalculates: Abbreviated Injury Score (six body regions), Injury Severity Score and Functional Capacity Index.

Outcome Information Variables

54. ***Total ICU Length of Stay***: The total number of patient days in any ICU (including all episodes).

55. ***Total Ventilator Days***: The total number of patient days spent on a mechanical ventilator (including all episodes)

56. ***Hospital Discharge Date***: The date the patient was discharged from the hospital.

    Autocalculates: Total Length of Hospital Stay

57. ***Hospital Discharge Time***: The time the patient was discharged from the hospital.

    Autocalculates: Total Length of Hospital Stay

58. ***Hospital Discharge Disposition***: The disposition of the patient when discharged from the hospital.

Financial Information Variables

59. ***Primary Method of Payment***: Primary source of payment for hospital care.

Quality Assurance Information Variables

60. ***Hospital Complications***: Any medical complication that occurred during the patient's stay at your hospital.

~~Auto-Populated Variables Defining Hospital Characteristics~~

1. ~~***AHA Identification Number**: The number assigned to the admitting hospital by the American Hospital Association*~~

2. ~~***Hospital Trauma Verification/Designation**: Determination of whether the hospital has been verified and/or designated as a trauma center.*~~

3. ~~***Level of Trauma Center (Adult)**: Determination of trauma center level at which the hospital is verified and/or designated.*~~

4. ~~***Level of Trauma Center (Pediatric)**: Determination of trauma center level at which the hospital is verified and/or designated.*~~

5. ~~***Trauma Center Authority**: Identification of the organization of governing body designating/verifying the trauma center*~~

~~Variables Auto-Calculated Based on Existing Data Elements~~

1. ~~*FIPS code (location code)*~~

2. ~~*Trauma Type (blunt, penetrating, burn)*~~

3. ~~*Intentionality (using CDC matrix)*~~

4. ~~*Total EMS Response Time (elapsed time from EMS dispatch to scene arrival)*~~

5. ~~*Total EMS Scene Time (elapsed time from EMS scene arrival to scene departure).*~~

6. ~~*Total EMS Time (elapsed time from EMS dispatch to hospital arrival)*~~

7. ~~*Overall GCS - EMS score (adult and pediatric)*~~

8. ~~*Overall GCS - ED score (adult and pediatric)*~~

9. ~~*Revised Trauma Score - EMS (adult and pediatric)*~~

10. ~~*Revised Trauma Score - ED (adult and pediatric)*~~

11. ~~*Abbreviated Injury Scale (six body regions)*~~

12. ~~*Injury Severity Score*~~

13. ~~*Functional Capacity Index*~~

14. ~~*Total ED Time*~~

15. ~~*Total Length of Hospital Stay*~~

Appendix 6: National Trauma Registry Data Tree

Graphical Scheme of the National Trauma Registry Data Elements

Data Element Types

Black Underlined - main category or grouping of the data elements

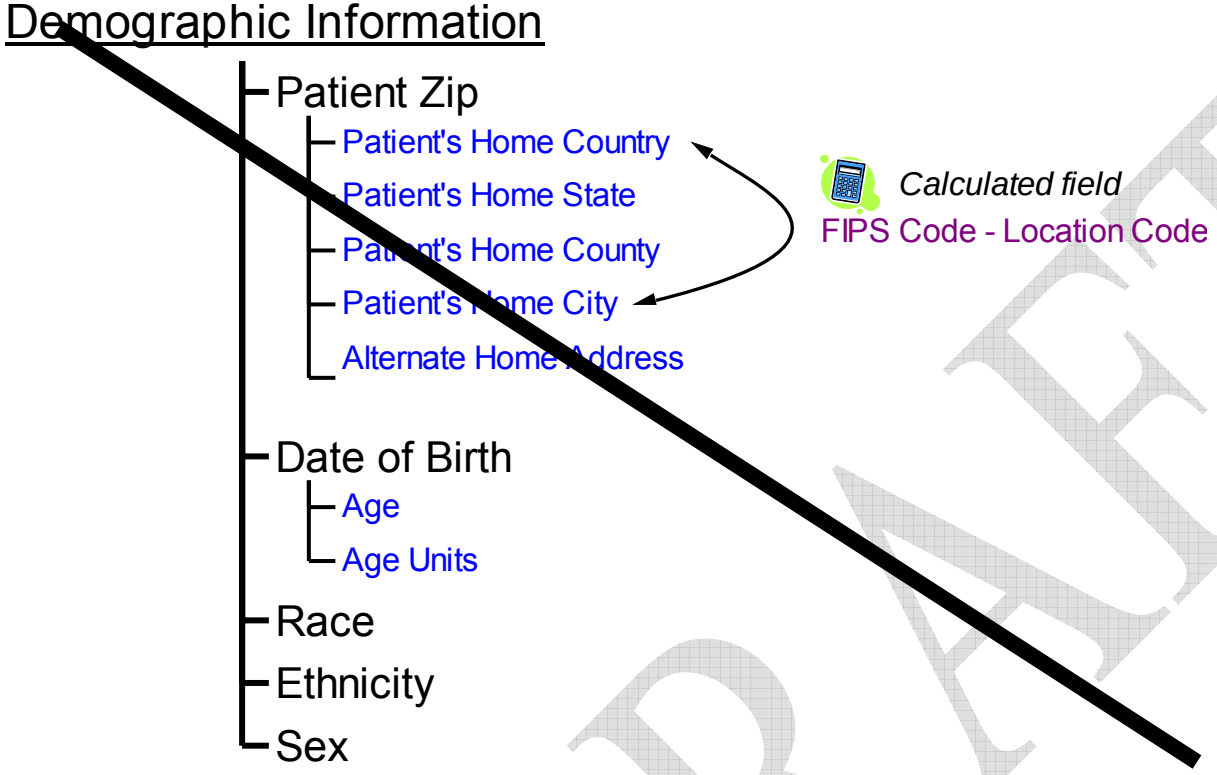
Black - primary data elements included in the National Trauma Registry Dataset.

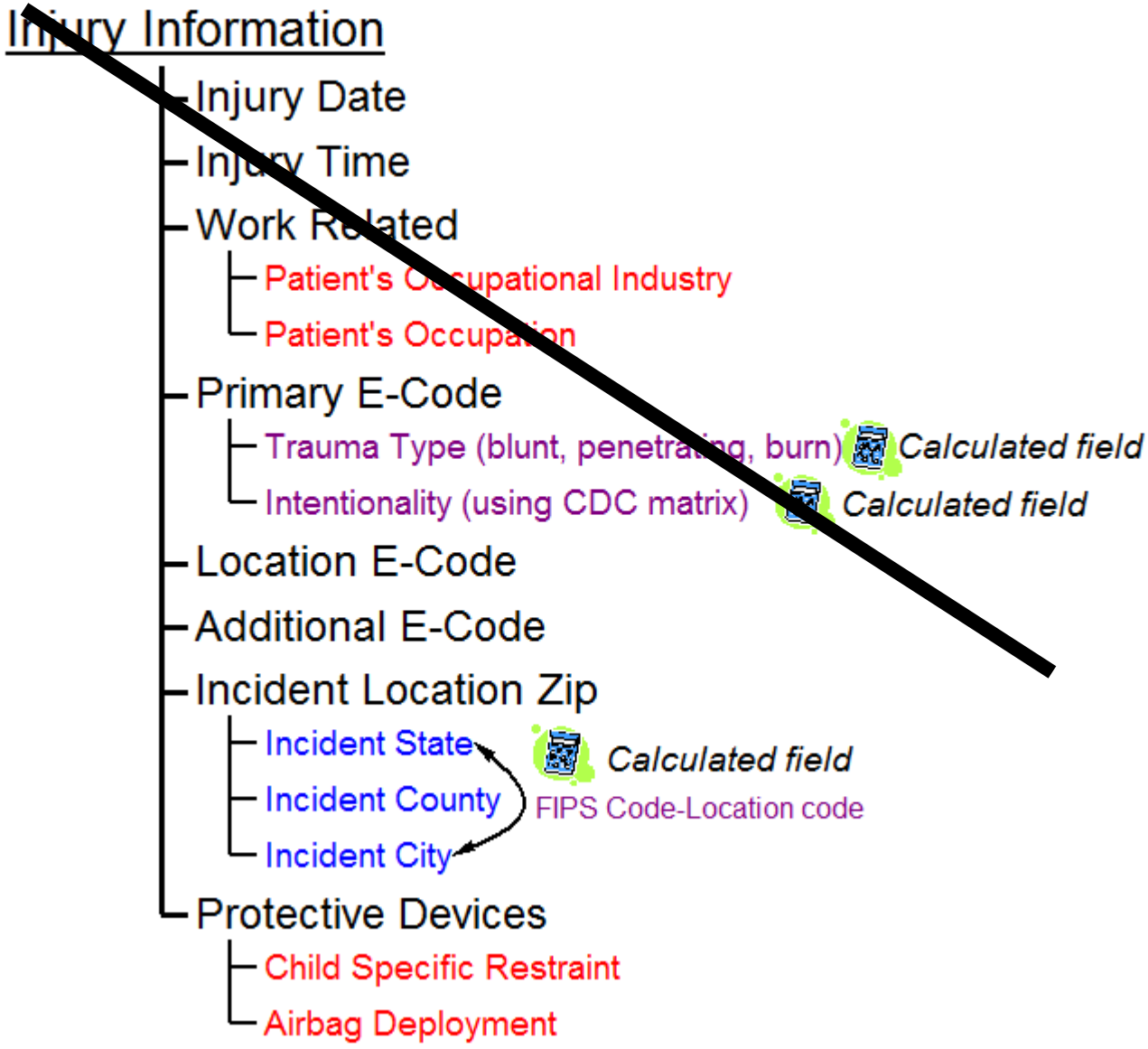
Blue - secondary data elements accessible only if primary variable is “unknown”, “not recorded”, “not applicable”, or “not known”.

Red - supportive data elements that further characterize the primary variable.

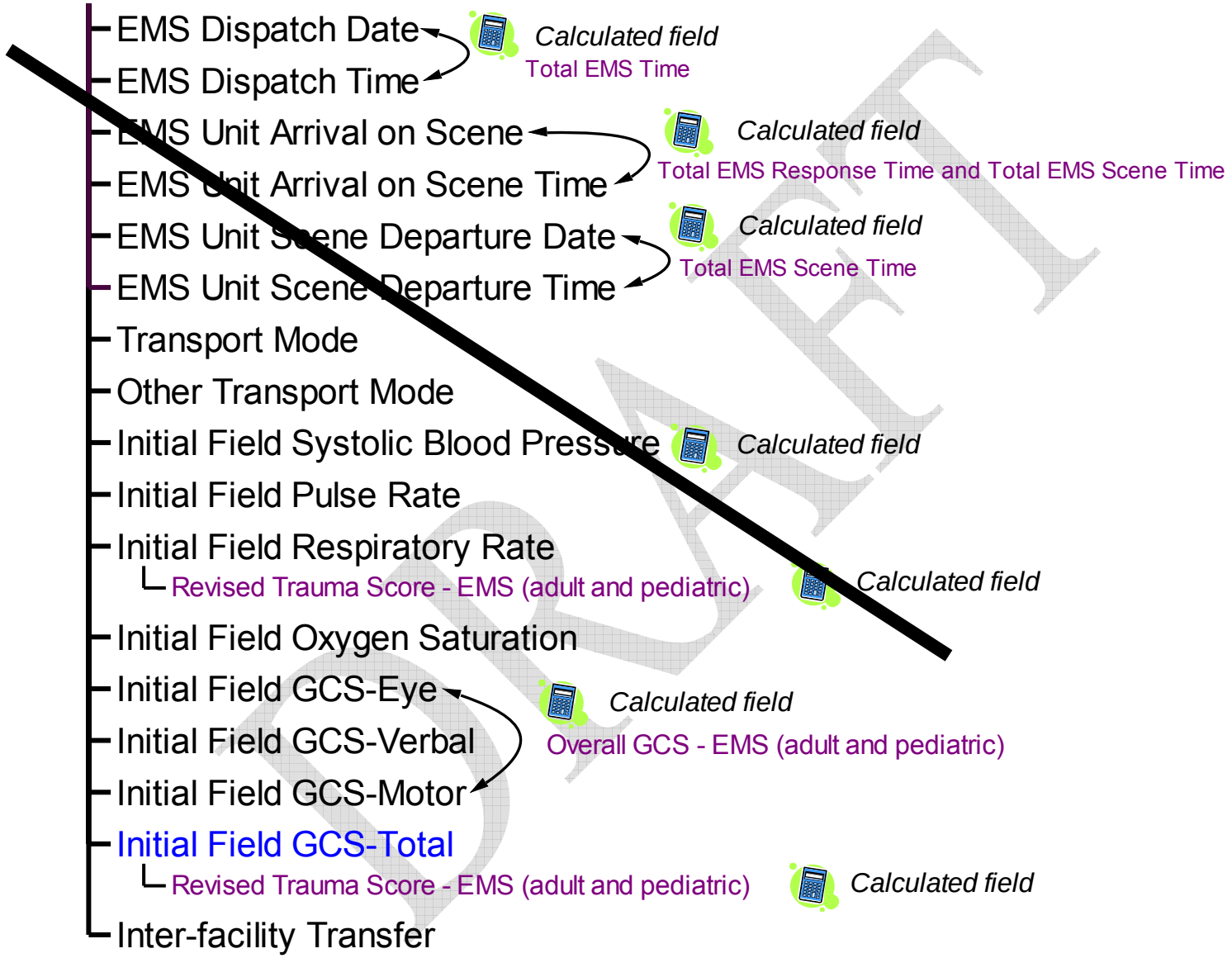
Purple - data elements auto-calculated based upon information provided by primary variable

Demographic Information

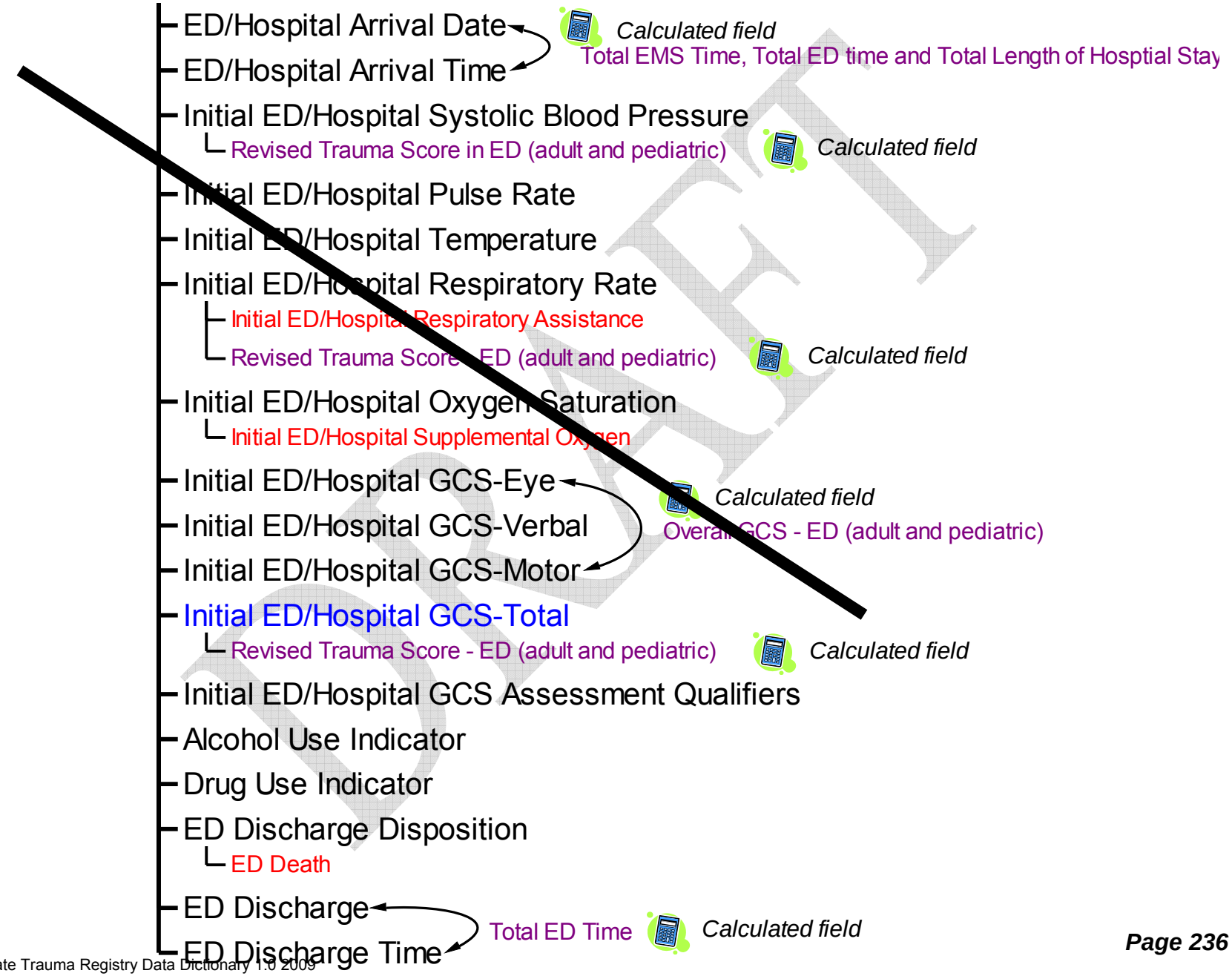


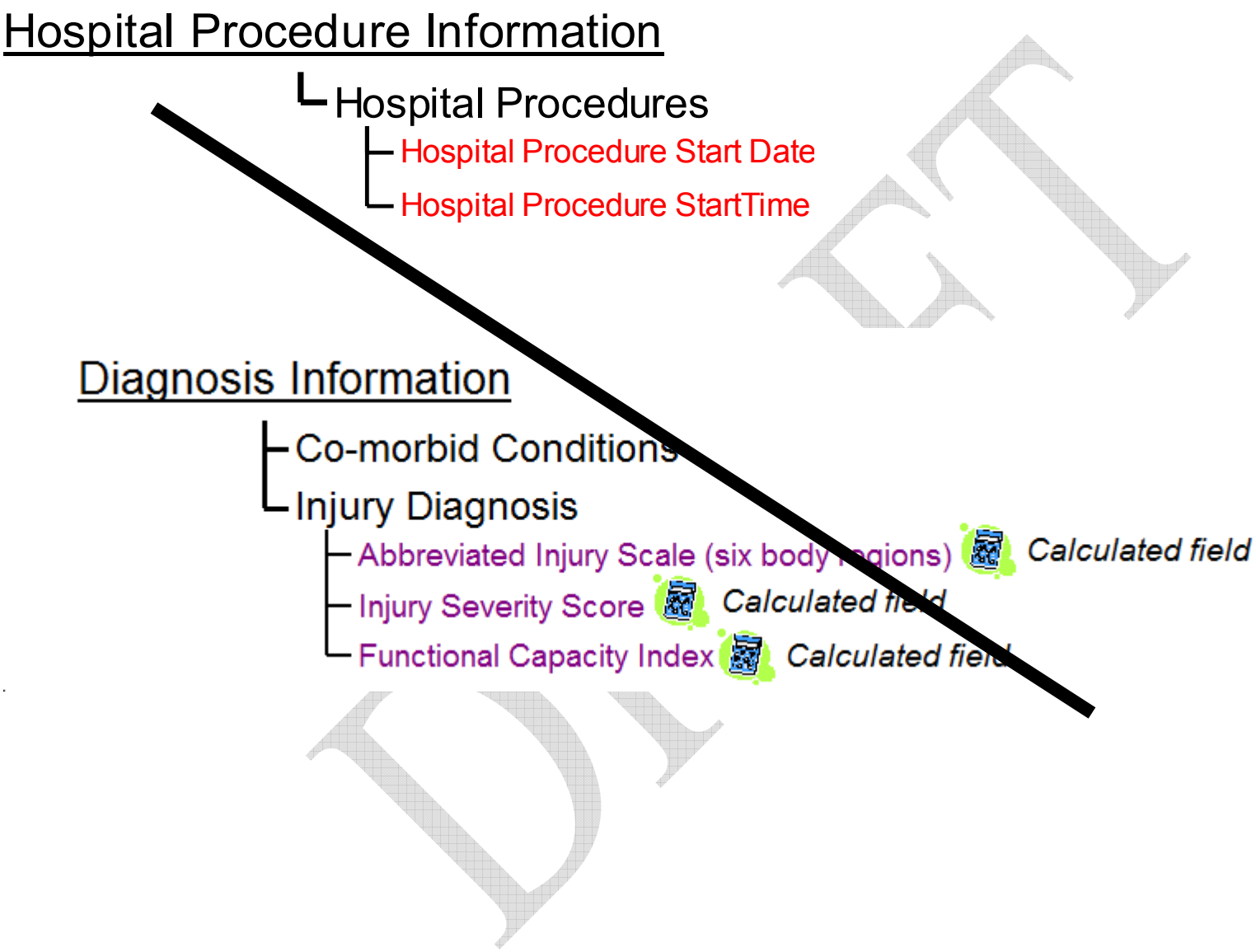

Injury Information
Injury Date
Injury Time
Work Related
Patient's Occupational Industry
Patient's Occupation
Primary E-Code
Trauma Type (blunt, penetrating, burn)
Calculated field
Intentionality (using CDC matrix)
Calculated field
Location E-Code
Additional E-Code
Incident Location Zip
Incident State
Incident County
Incident City
Calculated field
FIPS Code-Location code
Protective Devices
Child Specific Restraint
Airbag Deployment

Prehospital Information



Emergency Department Information




Hospital Procedure Information
Hospital Procedures
Hospital Procedure Start Date
Hospital Procedure StartTime
Diagnosis Information
Co-morbid Conditions
Injury Diagnosis
Abbreviated Injury Scale (six body regions)
Calculated field
Injury Severity Score
Calculated field
Functional Capacity Index
Calculated field

Outcome Information

- Total ICU Length of Stay
- Total Number of Ventilator Days
- Hospital Discharge Date
- Hospital Discharge Time
- Hospital Discharge Disposition

Calculated field

Total Hospital Length of Stay

Financial Information

- Primary Method of Payment

Quality Assurance Information

- Hospital Complications

Appendix 6~~7~~: Glossary of Terms

Co-Morbid Conditions

Alcoholism: To be determined based upon the brief screening tool used at your institution.
ICD-9 Code Range: 291.0-291.3, 291.5, 291.81, 291.89, 291.9, 303.00-303.93, 305.00-305.03, V11.3

Ascites: The presence of fluid accumulation (other than blood) in the peritoneal cavity noted on physical examination, abdominal ultrasound, or abdominal CT/MRI.
ICD-9 Code Range: 789.5 (pre 2008), 789.59

Bleeding disorder: Any condition that places the patient at risk for excessive bleeding due to a deficiency of blood clotting elements (e.g., vitamin K deficiency, hemophilia, thrombocytopenia, chronic anticoagulation therapy with Coumadin, Plavix, or similar medications). Do not include the patient on chronic aspirin therapy.
ICD-9 Code Range: for example - 269.0, 286.0, 286.1, 286.4, 287.1, 287.3 (pre 2006)-287.5. 287.9

Chemotherapy for cancer within 30 days: A patient who had any chemotherapy treatment for cancer in the 30 days prior to admission. Chemotherapy may include, but is not restricted to, oral and parenteral treatment with chemotherapeutic agents for malignancies such as colon, breast, lung, head and neck, and gastrointestinal solid tumors as well as lymphatic and hematopoietic malignancies such as lymphoma, leukemia, and multiple myeloma.
ICD-9 Code Range: V58.1(pre 2006), V58.11

Congenital Anomalies: Defined as documentation of a cardiac, pulmonary, body wall, CNS/spinal, GI, renal, orthopedic, or metabolic congenital anomaly.
ICD-9 Code Range: 740.0 through 759.9, 758.3 (pre 2005), 752.8 (pre 2004)

Congestive heart failure: Defined as the inability of the heart to pump a sufficient quantity of blood to meet the metabolic needs of the body or can do so only at an increased ventricular filling pressure. To be included, this condition must be noted in the medical record as CHF, congestive heart failure, or pulmonary edema with onset or increasing symptoms within 30 days prior to injury. Common manifestations are:

- Abnormal limitation in exercise tolerance due to dyspnea or fatigue
- Orthopnea (dyspnea on lying supine)
- Paroxysmal nocturnal dyspnea (awakening from sleep with dyspnea)
- Increased jugular venous pressure
- Pulmonary rales on physical examination
- Cardiomegaly
- Pulmonary vascular engorgement

ICD-9 Code Range: 398.91, 402.01, 402.11, 402.91, 404.11, 404.13, 404.91, 404.93, 425.0-425.9, 428.0

Current smoker: A patient who has smoked cigarettes in the year prior to admission. Do not include patients who smoke cigars or pipes or use chewing tobacco.

Currently requiring or on dialysis: Acute or chronic renal failure prior to injury that was requiring periodic peritoneal dialysis, hemodialysis, hemofiltration, or hemodiafiltration.
ICD-9 Code Range: V45.1

CVA/residual neurological deficit: A history prior to injury of a cerebrovascular accident (embolic, thrombotic, or hemorrhagic) with persistent residual motor, sensory, or cognitive dysfunction. (e.g., hemiplegia, hemiparesis, aphasia, sensory deficit, impaired memory).
ICD-9 Code Range: 430-438.9, 436

Diabetes mellitus: Diabetes mellitus prior to injury that required exogenous parenteral insulin or an oral hypoglycemic agent.
ICD-9 Code Range: 250.00-250.33, 250.40- 250.73

Disseminated cancer: Patients who have cancer that:

- Has spread to one site or more sites in addition to the primary site AND
- In whom the presence of multiple metastases indicates the cancer is widespread, fulminant, or near terminal. Other terms describing disseminated cancer include "diffuse," "widely metastatic," "widespread," or "carcinomatosis." Common sites of metastases include major organs (e.g., brain, lung, liver, meninges, abdomen, peritoneum, pleura, bone).

ICD-9 Code Range: 196.0-199.1

Do Not Resuscitate (DNR) status: The patient had a Do-Not-Resuscitate (DNR) document or similar advance directive recorded prior to injury.

Esophageal varices: Esophageal varices are engorged collateral veins in the esophagus which bypass a scarred liver to carry portal blood to the superior vena cava. A sustained increase in portal pressure results in esophageal varices which are most frequently demonstrated by direct visualization at esophagoscopy.
ICD-9 Code Range: 456.0-456.20

Functionally dependent health status: Pre-injury functional status may be represented by the ability of the patient to complete activities of daily living (ADL) including: bathing, feeding, dressing, toileting, and walking. This item is marked YES if the patient, prior to injury, was partially dependent or completely dependent upon equipment, devices or another person to complete some or all activities of daily living. Formal definitions of dependency are listed below:

- Partially dependent: The patient requires the use of equipment or devices coupled with assistance from another person for some activities of daily living. Any patient coming from a nursing home setting who is not totally dependent would fall into this category, as would any patient who requires kidney dialysis or home ventilator support that requires chronic oxygen therapy yet maintains some independent functions.
- Totally dependent: The patient cannot perform any activities of daily living for himself/herself. This would include a patient who is totally dependent upon nursing care, or a dependent nursing home patient. All patients with psychiatric illnesses should be evaluated for their ability to function with or without assistance with ADLs just as the non-psychiatric patient.

History of angina within past 1 month: Pain or discomfort between the diaphragm and the mandible resulting from myocardial ischemia. Typically angina is a dull, diffuse (fist sized or larger) substernal chest discomfort precipitated by exertion or emotion and relieved by rest or nitroglycerine. Radiation often occurs to the arms and shoulders and occasionally to the neck, jaw (mandible, not maxilla), or interscapular region. For patients on anti-anginal medications, enter yes only if the patient has had angina within one month prior to admission.
ICD-9 Code Range: V12.50

History of Myocardial Infarction within past 6 months: The history of a non-Q wave, or a Q wave infarction in the six months prior to injury as diagnosed in the patient's medical record.
ICD-9 Code Range: 412

History of revasc/amp for PVD (History of revascularization/amputation for peripheral vascular disease): Any type of angioplasty or revascularization procedure for atherosclerotic PVD (e.g., aortafemoral, femoral-femoral, femoral-popliteal) or a patient who has had any type of amputation procedure for PVD (e.g., toe amputations, transmetatarsal amputations, below the knee or above the knee amputations). Patients who have had amputation for trauma or resection of abdominal aortic aneurysms would not be included.

Hypertension requiring medication: History of a persistent elevation of systolic blood pressure >140 mm Hg and a diastolic blood pressure >90 mm Hg requiring an antihypertensive treatment (e.g., diuretics, beta blockers, ACE inhibitors, calcium channel blockers).
ICD-9 Code Range: 401.0-401.9, 402.00, 402.10, 402.90, 403.00, 403.10, 403.90, 404.00, 404.10, 404.90, 405.01-405.99

Impaired sensorium: Patients should be noted to having an impaired sensorium if they had mental status changes, and/or delirium in the context of a current illness prior to injury. Patients with chronic or longstanding mental status changes secondary to chronic mental illness (e.g., schizophrenia) or chronic dementing illnesses (e.g., multi-infarct dementia, senile dementia of the Alzheimer's type) should also be included. Mental retardation would qualify as impaired sensorium. For pediatric populations, patients with documented behavior disturbances, attention disorders, delayed learning or delayed development should be included.
ICD-9 Code Range: 290-290.9, 299.00, 312.9, 314.00, 315.2, 315.31, 315.39, 315.5, 315.8, 315.9, 317, 318.0, 318.1, 319, 331.1 (pre 2004), 331.11-331.2, V11.0, V11.1, V11.2, V11.8

Prematurity: Defined as documentation of premature birth, a history of bronchopulmonary dysplasia, ventilator support for greater than 7 days after birth, or the diagnosis of cerebral palsy. Premature birth is defined as infants delivered before 37 weeks from the first day of the last menstrual period.
ICD-9 Code Range: 343.0 through 343.9, 765.00 through 765.19, 770.7

Obesity: Defined as a Body Mass Index of 40 or greater.
ICD-9 Code Range: 278.00-278.01

Respiratory Disease: Defined as severe chronic lung disease, chronic asthma; cystic fibrosis; or COPD (such as emphysema and /or chronic bronchitis) resulting in any one or more of the following:

- Functional disability from COPD (e.g., dyspnea, inability to perform ADLs)
- Hospitalization in the past for treatment of COPD
- Requires chronic bronchodilator therapy with oral or inhaled agents
- An FEV1 of <75% of predicted on pulmonary function testing

Do not include patients whose only pulmonary disease is *acute* asthma. Do not include patients with diffuse interstitial fibrosis or sarcoidosis.
ICD-9 Code Range: 277.00, 490 though 493.92

Steroid use: Patients that required the regular administration of oral or parenteral corticosteroid medications (e.g., Prednisone, Decadron) in the 30 days prior to injury for a chronic medical condition (e.g., COPD, asthma, rheumatologic disease, rheumatoid arthritis, inflammatory bowel disease). Do not include topical corticosteroids applied to the skin or corticosteroids administered by inhalation or rectally.

Hospital Complications

Abdominal compartment syndrome: Defined as the sudden increase in the intra-abdominal pressure resulting in alteration in the respiratory mechanism, hemodynamic parameters, and renal perfusion. Typically patients with this syndrome are critically ill and require ventilator support and/or reoperation.
ICD-9 Code Range: 958.93

Abdominal fascia left open: No primary surgical closure of the fascia or intra-abdominal packs left at conclusion of primary laparotomy (damage control).

Acute renal failure: A patient who did not require dialysis prior to injury, who has worsening renal dysfunction after injury requiring hemodialysis, ultrafiltration, or peritoneal dialysis. If the patient refuses treatment (e.g., dialysis), the condition is still considered present.
ICD-9 Code Range: 403.11, 403.91, 404.12, 404.92, 582.0-582.9, 583.0-583.7, 584.5-584.9 585 (pre 2006), 586, 588.0, 958.5

ARDS: Adult (Acute) Respiratory Distress Syndrome: ARDS occurs in conjunction with catastrophic medical conditions, such as pneumonia, shock, sepsis (or severe infection throughout the body, sometimes also referred to as systemic infection, and may include or also be called a blood or blood-borne infection), and trauma. It is a form of sudden and often severe lung failure characterized by PaO2/FiO2 ≤ 200, decreased compliance, and diffuse bilateral pulmonary infiltrates without associated clinical evidence of CHF. The process must persist beyond 36 hours and require mechanical ventilation.
ICD-9 Code Range: ICD-9 codes 518.5 and 518.82 cross-referenced with procedural codes for ventilatory support (96.70, 96.71 and 96.72).

Base deficit: Defined as a value greater than 4 at any time during admission. This number is reported as a component of arterial or venous blood gases. The number may be reported by the lab as Base Deficit, or as Base Excess with a negative value.

Bleeding: Any transfusion (including autologous) of five or more units of packed red blood cells or whole blood given from the time the patient is injured up to and including 72 hours later. The blood may be given for any reason.

Cardiac arrest with CPR: The absence of a cardiac rhythm or presence of chaotic cardiac rhythm that results in loss of consciousness requiring the initiation of any component of basic and/or advanced cardiac life support. Excludes patients that arrive at the hospital in full arrest.
ICD-9 Code Range: 427.5

Coagulopathy: Defined as twice the upper limit of the normal range for PT or PTT in a patient without a pre-injury bleeding disorder of this magnitude.
ICD-9 Code Range: 286.6, 287.1, 287.3

Coma: Defined as significantly impaired level of consciousness (exclude transient disorientation or psychosis) for greater than 24 hours. The patient should be unconscious, or postures to painful stimuli, or is unresponsive to all stimuli. Does not include drug-induced coma.

Decubitus ulcer: Defined as a "pressure sore" resulting from pressure exerted on the skin, soft tissue, muscle, or bone by the weight of an individual against a surface beneath. Individuals unable to avoid long periods of uninterrupted pressure over bony prominences are at increased risk for the development of necrosis and ulceration.
ICD-9 Code Range: 707.0 (pre 2005), 707.00 through 707.09

Deep surgical site infection: Defined as an infection that occurs within 30 days after an operation and the infection appears to be related to the operation. The infection should involve deep soft tissues (e.g., fascial and muscle layers) at the site of incision and at least one of the following:

- Purulent drainage from the deep incision but not from the organ/space component of the surgical site.
- A deep incision spontaneously dehisces or is deliberately opened by a surgeon when the patient has at least one of the following signs or symptoms: fever (> 38 C), localized pain, or tenderness, unless site is culture-negative.
- An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination.
- Diagnosis of a deep incision infection by a surgeon or attending physician.

Note: Report infections that involve both superficial and deep incision sites as deep surgical site infection. If wound spontaneously opens as a result of infection, code for Deep Surgical Site Infection and Wound Disruption.

Drug or alcohol withdrawal syndrome: Defined as a set of symptoms that may occur when a person who has been drinking too much alcohol or habitually using certain drugs suddenly stops. Symptoms may include: actvation syndrome (i.e., tremulousness, agitation, rapid heart beat and high blood pressure), seizures, hallucinations or delirium tremens.
ICD-9 Code Range: 291.0, 291.3, 291.81, 292.0

Deep Vein Thrombosis (DVT)/thrombophlebitis: The formation, development, or existence of a blood clot or thrombus within the vascular system, which may be coupled with inflammation. This diagnosis may be confirmed by a venogram, ultrasound, or CT. The patient must be treated with anticoagulation therapy and/or placement of a vena cava filter or clipping of the vena cava.
ICD-9 Code Range: 451.0, 451.11, 451.19, 451.2, 451.81- 451.84, 451.89, 451.9, 453.40, 459.10-459.19, 997.2, 999.2

Extremity compartment syndrome: Defined as a condition in which there is swelling and an increase in pressure within a limited space (a fascial compartment) that presses on and compromises blood vessels, nerves, and/or tendons that run through that compartment. Compartment syndromes usually involve the leg but can also occur in the forearm, arm, thigh, and shoulder.

Graft/prosthesis/flap failure: Mechanical failure of an extracardiac vascular graft or prosthesis including myocutaneous flaps and skin grafts requiring return to the operating room or a balloon angioplasty.
ICD-9 Code Range: 996.00, 996.1, 996.52, 996.61, 996.62

Intracranial pressure elevation: Defined as intracranial pressure greater than 25 Torr for greater than 30 minutes.

Myocardial infarction: A new acute myocardial infarction occurring during hospitalization (within 30 days of injury).
ICD-9 Code Range: 410.00, 410.02, 410.10, 410.12, 410.20, 410.22, 410.30, 410.32, 410.40, 410.42, 410.50, 410.52, 410.60, 410.62, 410.70, 410.72, 410.80, 410.82, 410.90, 410.92

Organ/space surgical site infection: Defined as an infection that occurs within 30 days after an operation and infection involves any part of the anatomy (eg, organs or spaces) other than the incision, which was opened or manipulated during a procedure; and at least one of the following, including:

- Purulent drainage from a drain that is placed through a stab wound or puncture into the organ/space;
- Organisms isolated from an aseptically obtained culture of fluid or tissue in the organ/space;
- An abscess or other evidence of infection involving the organ/space that is found on direct examination, during reoperation, or by histopathologic or radiologic examination; or
- Diagnosis of an organ/space SSI by a surgeon or attending physician.

Pneumonia: Patients with evidence of pneumonia that develops during the hospitalization.
Patients with pneumonia must meet at least one of the following two criteria:
Criterion 1: Rales or dullness to percussion on physical examination of chest AND any of the following:

- New onset of purulent sputum or change in character of sputum
- Organism isolated from blood culture
- Isolation of pathogen from specimen obtained by transtracheal aspirate, bronchial brushing, or biopsy

Criterion 2: Chest radiographic examination shows new or progressive infiltrate, consolidation, cavitation, or pleural effusion AND any of the following:

- New onset of purulent sputum or change in character of sputum
- Organism isolated from the blood
- Isolation of pathogen from specimen obtained by transtracheal aspirate, bronchial brushing, or biopsy
- Isolation of virus or detection of viral antigen in respiratory secretions
- Diagnostic single antibody titer (IgM) or fourfold increase in paired serum samples (IgG) for pathogen
- Histopathologic evidence of pneumonia
  ICD-9 Code Range: 480.0-480.3, 481, 482.0, 482.1, 482.2, 482.30, 482.31, 482.32, 482.39, 482.40, 482.41, 482.49, 482.81-482.89, 482.9, 483.0, 483.1, 483.8, 484.1, 484.8, 485, 486

Pulmonary embolism: Defined as a lodging of a blood clot in a pulmonary artery with subsequent obstruction of blood supply to the lung parenchyma. The blood clots usually originate from the deep leg veins or the pelvic venous system. Consider the condition present if the patient has a V-Q scan interpreted as high probability of pulmonary embolism or a positive pulmonary arteriogram or positive CT angiogram.
ICD-9 Code Range: 415.11, 415.19

Stroke/CVA: Following injury, patient develops an embolic, thrombotic, or hemorrhagic vascular accident or stroke with motor, sensory, or cognitive dysfunction (e.g., hemiplegia, hemiparesis, aphasia, sensory deficit, impaired memory) that persists for 24 or more hours.
ICD-9 Code Range: 997.02

Superficial surgical site infection: Defined as an infection that occurs within 30 days after an operation and infection involves only skin or subcutaneous tissue of the incision and at least one of the following:

- Purulent drainage, with or without laboratory confirmation, from the superficial incision.
- Organisms isolated from an aseptically obtained culture of fluid or tissue from the superficial incision.
- At least one of the following signs or symptoms of infection: pain or tenderness, localized swelling, redness, or heat and superficial incision is deliberately opened by the surgeon, unless incision is culture-negative.
- Diagnosis of superficial incisional surgical site infection by the surgeon or attending physician.

Do not report the following conditions as superficial surgical site infection:

- Stitch abscess (minimal inflammation and discharge confined to the points of suture penetration).
- Infected burn wound.
- Incisional SSI that extends into the fascial and muscle layers (see deep surgical site infection).

Systemic sepsis: Defined as definitive evidence of infection, plus evidence of a systemic response to infection. This systemic response is manifested by the presence of infection and TWO or more of the following conditions:

- Temp >38 degrees C or <36 degrees C
- Sepsis with hypotension despite adequate fluid resuscitation combined with perfusion abnormalities that may include, but are not limited to, lactic acidosis, oliguria, or an acute alteration in mental status. Patients who are on inotropic or vasopressor agents may not be hypotensive at the time that perfusion abnormalities are measured.
- HR >90 bpm
- RR >20 breaths/min or PaCO2 <32 mmHg(<4.3 kPa)
- WBC >12,000 cell/mm3, <4000 cells/mm3, or >10% immature (band) forms

ICD-9 Code Range: 038.0, 038.10, 038.11, 038.19, 038.3, 038.4-038.9, 790.7

Unplanned intubation: Patient requires placement of an endotracheal tube and mechanical or assisted ventilation because of the onset of respiratory or cardiac failure manifested by severe respiratory distress, hypoxia, hypercarbia, or respiratory acidosis. In patients who were intubated in the field or Emergency Department, or those intubated for surgery, unplanned intubation occurs if they require reintubation after being extubated.

Wound disruption: Separation of the layers of a surgical wound, which may be partial or complete, with disruption of the fascia.
ICD-9 Code Range: 998.3 (pre 2004), 998.31, 998.32

Other Terms

Dead on arrival: Dead on Arrival is defined as arrival at the hospital with no signs of life, but with pre-hospital CPR as indicated below:

- Age >12 years
  - Blunt trauma, more than 5 minutes pre-hospital CPR
  - Penetrating head/neck/abdomen trauma, more than 5 minutes pre-hospital CPR
  - Penetrating chest trauma, more than 15 minutes pre-hospital CPR
- Age ≤ 12 years
  - Blunt trauma, more than 15 minutes pre-hospital CPR
  - Penetrating trauma, more than 15 minutes pre-hospital CPR

Foreign Visitor is defined as any person visiting a country other than his/her usual place of residence for any reason without intending to receive earnings in the visited country.

Intermediate care facility: A facility providing a level of medical care that is less than the degree of care and treatment that a hospital or skilled nursing facility is designed to provide but greater than the level of room and board.

Home Health Service: A certified service approved to provide care received at home as part-time skilled nursing care, speech therapy, physical or occupational therapy or, part-time services of home health aides.

Homeless is defined as a person who lacks housing. The definition also includes a person living in transitional housing or a supervised public or private facility providing temporary living quarters.

Hospice: An organization which is primarily designed to provide pain relief, symptom management and supportive services for the terminally ill and their families.

Migrant Worker is defined as a person who temporarily leaves his/her principal place of residence within a country in order to accept seasonal employment in the same country.

Operative and/or essential procedures is defined as procedures performed in the Operating Room, Emergency Department, or Intensive Care Unit that were essential to the diagnoses, stabilization, or treatment of the patient's specific injuries. Repeated diagnostic procedures (e.g., repeated CT scan) should not be recorded (record only the first procedure).

Skilled Nursing Care: Daily nursing and rehabilitative care that is performed only by or under the supervision of skilled professional or technical personnel. Skilled care includes administering medication, medical diagnosis and minor surgery.

Undocumented Citizen is defined as a national of another country who has entered or stayed in another country without permission.

~~Co-Morbid Conditions~~

Alcoholism: To be determined based upon the brief screening tool used at your institution.

ICD-9 Code Range: 291.0-291.3, 291.5, 291.8, 291.81, 291.89, 291.9, 303.00-303.93, 305.00-305.03, V11.3

Ascites: The presence of fluid accumulation (other than blood) in the peritoneal cavity noted on physical examination, abdominal ultrasound, or abdominal CT/MRI.

ICD-9 Code Range: 789.5

Bleeding disorder: Any condition that places the patient at risk for excessive bleeding due to a deficiency of blood clotting elements (e.g., vitamin K deficiency, hemophilia, thrombocytopenia, chronic anticoagulation therapy with Coumadin, Plavix, or similar medications). Do not include the patient on chronic aspirin therapy.

ICD-9 Code Range: for example - 269.0, 286.0, 286.1, 286.4, 287.1, 287.3-287.5. 287.9

Chemotherapy for cancer within 30 days: A patient who had any chemotherapy treatment for cancer in the 30 days prior to admission. Chemotherapy may include, but is not restricted to, oral and parenteral treatment with chemotherapeutic agents for malignancies such as colon, breast, lung, head and neck, and gastrointestinal solid tumors as well as lymphatic and hematopoietic malignancies such as lymphoma, leukemia, and multiple myeloma.

ICD-9 Code Range: V58.1

Congestive heart failure: Defined as the inability of the heart to pump a sufficient quantity of blood to meet the metabolic needs of the body or can do so only at an increased ventricular filling pressure. To be included, this condition must be noted in the medical record as CHF, congestive heart failure, or pulmonary edema with onset or increasing symptoms within 30 days prior to injury. Common manifestations are:

1. Abnormal limitation in exercise tolerance due to dyspnea or fatigue
2. Orthopnea (dyspnea on lying supine)
3. Paroxysmal nocturnal dyspnea (awakening from sleep with dyspnea)
4. Increased jugular venous pressure
5. Pulmonary rales on physical examination
6. Cardiomegaly
7. Pulmonary vascular engorgement

ICD-9 Code Range: 398.91, 402.11, 402.01, 402.91, 404.11, 404.13, 404.91, 404.93, 425.0-425.9, 428.0

Current smoker: A patient who has smoked cigarettes in the year prior to admission. Do not include patients who smoke cigars or pipes or use chewing tobacco.

Currently requiring or on dialysis: Acute or chronic renal failure prior to injury that was requiring periodic peritoneal dialysis, hemodialysis, hemofiltration, or hemodiafiltration.

ICD-9 Code Range: V45.1

CVA/residual neurological deficit: A history prior to injury of a cerebrovascular accident (embolic, thrombotic, or hemorrhagic) with persistent residual motor, sensory, or cognitive dysfunction. (e.g., hemiplegia, hemiparesis, aphasia, sensory deficit, impaired memory).

ICD-9 Code Range: 362.34, 430-438.9, 436

Diabetes mellitus: Diabetes mellitus prior to injury that required exogenous parenteral insulin or an oral hypoglycemic agent. Do not include a patient if diabetes is controlled by diet alone.

ICD-9 Code Range: 250.00-250.39, 250.4- 250.79

Disseminated cancer: Patients who have cancer that:

1. Has spread to one site or more sites in addition to the primary site AND
2. In whom the presence of multiple metastases indicates the cancer is widespread, fulminant, or near terminal. Other terms describing disseminated cancer include "diffuse," "widely metastatic," "widespread," or "carcinomatosis." Common sites of metastases include major organs (e.g., brain, lung, liver, meninges, abdomen, peritoneum, pleura, bone).

ICD-9 Code Range: 196.0-199.1

Do Not Resuscitate (DNR) status: The patient had a Do-Not-Resuscitate (DNR) document or similar advance directive recorded prior to injury.

Esophageal varices: Esophageal varices are engorged collateral veins in the esophagus which bypass a scarred liver to carry portal blood to the superior vena cava. A sustained increase in portal pressure results in esophageal varices which are most frequently demonstrated by direct visualization at esophagoscopy.

ICD-9 Code Range: 456.0-456.2

Functionally dependent health status: Pre-injury functional status may be represented by the ability of the patient to complete activities of daily living (ADL) including: bathing, feeding, dressing, toileting, and walking. This item is marked YES if the patient, prior to injury, was partially dependent or completely dependent upon equipment, devices or another person to complete some or all activities of daily living. Formal definitions of dependency are listed below:

1. Partially dependent: The patient requires the use of equipment or devices coupled with assistance from another person for some activities of daily living. Any patient coming from a nursing home setting who is not totally dependent would fall into this category, as would any patient who requires kidney dialysis or home ventilator support that requires chronic oxygen therapy yet maintains some independent functions.

2. Totally dependent: The patient cannot perform any activities of daily living for himself/herself. This would include a patient who is totally dependent upon nursing care, or a dependent nursing home patient. All patients with psychiatric illnesses should be evaluated for their ability to function with or without assistance with ADLs just as the non-psychiatric patient.

History of angina within past 1 month: Pain or discomfort between the diaphragm and the mandible resulting from myocardial ischemia. Typically angina is a dull, diffuse (fist sized or larger) substernal chest discomfort precipitated by exertion or emotion and relieved by rest or nitroglycerine. Radiation often occurs to the arms and shoulders and occasionally to the neck, jaw (mandible, not maxilla), or interscapular region. For patients on anti-anginal medications, enter yes only if the patient has had angina within one month prior to admission.

ICD-9 Code Range: V12.5, V12.50

History of Myocardial Infarction within past 6 months: The history of a non-Q wave, or a Q wave infarction in the six months prior to injury as diagnosed in the patient's medical record.

ICD-9 Code Range: 412

History of severe COPD: Chronic obstructive pulmonary disease (such as emphysema and/or chronic bronchitis) resulting in any one or more of the following:

1. Functional disability from COPD (e.g., dyspnea, inability to perform ADLs)
2. Hospitalization in the past for treatment of COPD
3. Requires chronic bronchodilator therapy with oral or inhaled agents
4. An FEV1 of <75% of predicted on pulmonary function testing

Do not include patients whose only pulmonary disease is acute asthma. Asthma is defined as an acute and chronic inflammatory disease of the airways resulting in bronchospasm. Do not include patients with diffuse interstitial fibrosis or sarcoidosis.

ICD-9 Code Range: 416.0-416.9, 417.9, 291.0-291.3, 291.5, 291.8, 291.81, 291.89, 291.9, 303.00-303.93, 305.00-305.03, V11.3

History of revasc/amp for PVD (History of revascularization/amputation for peripheral vascular disease): Any type of angioplasty or revascularization procedure for atherosclerotic PVD (e.g., aortafemoral, femoral-femoral, femoral-popliteal) or a patient who has had any type of amputation procedure for PVD (e.g., toe amputations, transmetatarsal amputations, below the knee or above the knee amputations). Patients who have had amputation for trauma or resection of abdominal aortic aneurysms would not be included.

Hypertension requiring medication: History of a persistent elevation of systolic blood pressure >140 mm Hg and a diastolic blood pressure >90 mm Hg requiring an antihypertensive treatment (e.g., diuretics, beta blockers, ACE inhibitors, calcium channel blockers).

ICD-9 Code Range: 401.0-401.9, 405.0-405.99, 402.0, 402.10, 402.90, 403.00, 403.10, 403.90, 404.00, 404.10, 404.90

Impaired sensorium: Patients should be noted to having an impaired sensorium if they had mental status changes, and/or delirium in the context of a current illness prior to injury. Patients with chronic or longstanding mental status changes secondary to chronic mental illness (e.g., schizophrenia) or chronic dementing illnesses (e.g., multiinfarct dementia, senile dementia of the Alzheimer's type) should also be included.

ICD-9 Code Range: 290-290.9, 331-331.2, V11.0, V11.1, V11.2, V11.8

Obesity: Defined as a Body Mass Index of 40 or greater.

ICD-9 Code Range: 278.00-278.01

Steroid use: Patients that required the regular administration of oral or parenteral corticosteroid medications (e.g., Prednisone, Decadron) in the 30 days prior to injury for a chronic medical condition (e.g., COPD, asthma, rheumatologic disease, rheumatoid arthritis, inflammatory bowel disease). Do not include topical corticosteroids applied to the skin or corticosteroids administered by inhalation or rectally.

HOSPITAL COMPLICATIONS

Abdominal compartment syndrome: Defined as the sudden increase in the intra-abdominal pressure resulting in alteration in the respiratory mechanism, hemodynamic parameters, and renal perfusion. Typically patients with this syndrome are critically ill and require ventilator support and/or reoperation.

Abdominal fascia left open: No primary surgical closure of the fascia or intra-abdominal packs left at conclusion of primary laparotomy (damage control).

Acute renal failure: A patient who did not require dialysis prior to injury, who has worsening renal dysfunction after injury requiring hemodialysis, ultrafiltration, or peritoneal dialysis. If the patient refuses treatment (e.g., dialysis), the condition is still considered present.

ICD-9 Code Range: 403.11, 403.91, 404.12, 404.92, 582-582.9, 583-583.7, 585, 586, 588.0 404.12, 404.92

ARDS: Adult (Acute) Respiratory Distress Syndrome: ARDS occurs in conjunction with catastrophic medical conditions, such as pneumonia, shock, sepsis (or severe infection throughout the body, sometimes also referred to as systemic infection, and may include or also be called a blood or blood-borne infection), and trauma. It is a form of sudden and often severe lung failure characterized by $PaO_2/FiO_2 \leq 200$, decreased compliance, and diffuse bilateral pulmonary infiltrates without associated clinical evidence of CHF. The process must persist beyond 36 hours and require mechanical ventilation.

ICD-9 Code Range: ICD-9 codes 518.5 and 518.82 cross-referenced with procedural codes for ventilatory support (96.70, 96.71 and 96.72).

Base deficit: Defined as a value greater than 4 at any time during admission. This number is reported as a component of arterial or venous blood gases. The number may be reported by the lab as Base Deficit, or as Base Excess with a negative value.

Bleeding: Any transfusion (including autologous) of five or more units of packed red blood cells or whole blood given from the time the patient is injured up to and including 72 hours later. The blood may be given for any reason.

Cardiac arrest with CPR: The absence of a cardiac rhythm or presence of chaotic cardiac rhythm that results in loss of consciousness requiring the initiation of any component of basic and/or advanced cardiac life support.

ICD-9 Code Range: 427.5

Coagulopathy: Defined as twice the upper limit of the normal range for PT or PTT in a patient without a pre-injury bleeding disorder of this magnitude.

ICD-9 Code Range: 286.0-286.4, 287.1, 287.3

Coma: Defined as significantly impaired level of consciousness (exclude transient disorientation or psychosis) for greater than 24 hours.

Decubitus ulcer: Defined as a "pressure sore" resulting from pressure exerted on the skin, soft tissue, muscle, or bone by the weight of an individual against a surface beneath. Individuals unable to avoid long periods of uninterrupted pressure over bony prominences are at increased risk for the development of necrosis and ulceration.

ICD-9 Code Range: 707.0

Deep surgical site infection: Defined as an infection that occurs within 30 days after an operation and the infection appears to be related to the operation. The infection should involve deep soft tissues (e.g., fascial and muscle layers) at the site of incision and at least one of the following:

1. Purulent drainage from the deep incision but not from the organ/space component of the surgical site.
2. A deep incision spontaneously dehisces or is deliberately opened by a surgeon when the patient has at least one of the following signs or symptoms: fever (> 38 C), localized pain, or tenderness, unless site is culture-negative.
3. An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination.
4. Diagnosis of a deep incision infection by a surgeon or attending physician.

Note:
Report infections that involve both superficial and deep incision sites as deep surgical site infection.

Drug or alcohol withdrawal syndrome: Defined as a set of symptoms that may occur when a person who has been drinking too much alcohol or habitually using certain drugs suddenly stops. Symptoms may include: actvation syndrome (i.e., tremulousness, agitation, rapid heart beat and high blood pressure), seizures, hallucinations or delirium tremens.

ICD-9 Code Range: 291.0, 291.3, 291.81, 292.0

Deep Vein Thrombosis (DVT)/thrombophlebitis: The formation, development, or existence of a blood clot or thrombus within the vascular system, which may be coupled with inflammation. This diagnosis may be confirmed by a venogram, ultrasound, or CT. The patient must be treated with heparin and/or coumadin or warfarin, and/or placement of a vena cava filter or clipping of the vena cava.

ICD-9 Code Range: 453.40, 459.10-459.19, 997.2, 999.2

Extremity compartment syndrome: Defined as a condition in which there is swelling and an increase in pressure within a limited space (a fascial compartment) that presses on and compromises blood vessels, nerves, and/or tendons that run through that compartment. Compartment syndromes usually involve the leg but can also occur in the forearm, arm, thigh, and shoulder.

Graft/prosthesis/flap failure: Mechanical failure of an extracardiac vascular graft or prosthesis including myocutaneous flaps and skin grafts requiring return to the operating room or a balloon angioplasty.

ICD-9 Code Range: 996.0, 996.1, 996.5, 996.52, 996.61, 996.62

Intracranial pressure elevation: Defined as intracranial pressure greater than 25 Torr for greater than 30 minutes.

Myocardial infarction: A new acute myocardial infarction occurring within 30 days of injury manifested by new Q-waves on ECG.

ICD-9 Code Range: 410.00, 410.02, 410.10, 410.12, 410.20, 410.22, 410.30, 410.32, 410.40, 410.42, 410.50, 410.52, 410.60, 410.62, 410.70, 410.72, 410.80, 410.82, 410.90, 410.92, 412

Organ/space surgical site infection: Defined as an infection that occurs within 30 days after an operation and infection involves any part of the anatomy (eg, organs or spaces) other than the incision, which was opened or manipulated during a procedure; and at least one of the following, including:

1. Purulent drainage from a drain that is placed through a stab wound or puncture into the organ/space;
2. Organisms isolated from an aseptically obtained culture of fluid or tissue in the organ/space;
3. An abscess or other evidence of infection involving the organ/space that is found on direct examination, during reoperation, or by histopathologic or radiologic examination; or
4. Diagnosis of an organ/space SSI by a surgeon or attending physician.

Pneumonia: Patients with evidence of pneumonia that develops during the hospitalization. Patients with pneumonia must meet at least one of the following two criteria:

Criterion 1. Rales or dullness to percussion on physical examination of chest AND any of the following:

a. New onset of purulent sputum or change in character of sputum
b. Organism isolated from blood culture
c. Isolation of pathogen from specimen obtained by transtracheal aspirate, bronchial brushing, or biopsy

Criterion 2. Chest radiographic examination shows new or progressive infiltrate, consolidation, cavitation, or pleural effusion AND any of the following:

a. New onset of purulent sputum or change in character of sputum
b. Organism isolated from the blood
c. Isolation of pathogen from specimen obtained by transtracheal aspirate, bronchial brushing, or biopsy
d. Isolation of virus or detection of viral antigen in respiratory secretions
e. Diagnostic single antibody titer (IgM) or fourfold increase in paired serum samples (IgG) for pathogen
f. Histopathologic evidence of pneumonia

ICD-9 Code Range: 481, 482.0, 482.1, 48V 2.2, 482.30, 482.31, 482.32, 482,39, 482.40, 482.41, 482.49, 482.81, 482.84, 482.89, 482.9, 483.8, 485, 486

Pulmonary embolism: Defined as a lodging of a blood clot in a pulmonary artery with subsequent obstruction of blood supply to the lung parenchyma. The blood clots usually originate from the deep leg veins or the pelvic venous system. Consider the condition present if the patient has a V-Q scan interpreted as high probability of pulmonary embolism or a positive pulmonary arteriogram or positive CT angiogram.

ICD-9 Code Range: 415.11, 415.19

Stroke/CVA: Following injury, patient develops an embolic, thrombotic, or hemorrhagic vascular accident or stroke with motor, sensory, or cognitive dysfunction (e.g., hemiplegia, hemiparesis, aphasia, sensory deficit, impaired memory) that persists for 24 or more hours.

ICD-9 Code Range: 997.02

Superficial surgical site infection: Defined as an infection that occurs within 30 days after an operation and infection involves only skin or subcutaneous tissue of the incision and at least one of the following:

1. Purulent drainage, with or without laboratory confirmation, from the superficial incision.
2. Organisms isolated from an aseptically obtained culture of fluid or tissue from the superficial incision.
3. At least one of the following signs or symptoms of infection: pain or tenderness, localized swelling, redness, or heat and superficial incision is deliberately opened by the surgeon, unless incision is culture-negative.

4. Diagnosis of superficial incisional surgical site infection by the surgeon or attending physician.

Do not report the following conditions as superficial surgical site infection:

1. Stitch abscess (minimal inflammation and discharge confined to the points of suture penetration).
2. Infected burn wound.
3. Incisional SSI that extends into the fascial and muscle layers (see deep surgical site infection).

Systemic sepsis: Defined as definitive evidence of infection, plus evidence of a systemic response to infection. This systemic response is manifested by TWO or more of the following conditions:

1. Temp >38 degrees C or <36 degrees C
2. Sepsis with hypotension despite adequate fluid resuscitation combined with perfusion abnormalities that may include, but are not limited to, lactic acidosis, oliguria, or an acute alteration in mental status. Patients who are on inotropic or vasopressor agents may not be hypotensive at the time that perfusion abnormalities are measured.
3. HR >90 bpm
4. RR >20 breaths/min or PaCO2 <32 mmHg(<4.3 kPa)
5. WBC >12,000 cell/mm3, <4000 cells/mm3, or >10% immature (band) forms

ICD-9 Code Range: 038.0, 038.10, 038.11, 038.19, 038.3, 038.4-038.9, 790.7

Unplanned intubation: Patient requires placement of an endotracheal tube and mechanical or assisted ventilation because of the onset of respiratory or cardiac failure manifested by severe respiratory distress, hypoxia, hypercarbia, or respiratory acidosis. In patients who were intubated in the field or Emergency Department, or those intubated for surgery, unplanned intubation occurs if they require reintubation after being extubated.

Wound disruption: Separation of the layers of a surgical wound, which may be partial or complete, with disruption of the fascia.

ICD-9 Code Range: 998.3, 998.31, 998.32

OTHER TERMS

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- Penetrating head/neck/abdomen trauma, more than 5 minutes pre-hospital CPR
- Penetrating chest trauma, more than 15 minutes pre-hospital CPR

~~Age ≤ 12 years~~

~~Blunt trauma, more than 15 minutes pre-hospital CPR~~

~~Penetrating trauma, more than 15 minutes pre-hospital CPR~~

~~***Operative and/or essential procedures*** is defined as procedures performed in the Operating Room, Emergency Department, or Intensive Care Unit that were essential to the diagnoses, stabilization, or treatment of the patient's specific injuries. Repeated diagnostic procedures (e.g., repeated CT scan) should not be recorded (record only the first procedure).~~